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THE MONTHLY

ABSTRACT OF MEDICAL SCIENCE:

A DIGEST

OF THE

PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

VOLUME IV.

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THE MONTHLY ABSTRACT
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Anatomy and Physiology.

The Action of the Intercostal Muscles.

Professor RUTHERFORD, being convinced that Hamberger's model of the action of the intercostal muscles by means of parallel bars and elastic bands is erroneous in principle, adopts the less fallacious method of applying the elastic bands by means of nails to the ribs themselves of a skeleton; for, as Professor Humphry has demonstrated, the ribs, unlike the rigid bars of the above-mentioned model, are arcs capable of rotation round an axis directed from their posterior ends to the costal cartilages. The results of Professor Rutherford's experiments are recorded in a short note, illustrated by figures taken from photographs, in vol. x., part iii. (April, 1876), of the *Journal of Anatomy and Physiology*.

In the model the representations of the ribs descend by the action of the elastic bands; but in the skeleton the ribs are raised—the second, third, and fourth individually, their costal cartilages being separate, while, if the fourth and fifth ribs be further connected by a band, a simultaneous elevation of the latter and of the four succeeding ribs will result, owing to the fusion of their cartilages. Since the first rib is more fixed, being unlike the rest, less flexible, devoid of joint between it and its cartilage, and forming an arc of a smaller circle, the ribs which succeed it are raised; but if the last rib of the series be made the fixed point, by being held immobile, all those above it [the first rib excepted? *Rep.*] will be, on the contrary, depressed. Both the external, as well as the internal intercostals, seem to elevate the ribs to which they are attached, though it would appear that, by the action of the former, the *manubrium sterni* is more elevated, and the ensiform process drawn further forward than they would be by the latter series of muscles. How far this experiment may indicate the powers of the actual muscles it is impossible to say, as the effect of the elastic bands depends, not only on their position, but also on the degree of their power of stretching.—*London Med. Record*, Nov. 15, 1876.

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The Dependence of the Rhythm of the Heart on Variations in the Blood-pressure.

As to immediate effects of the blood-pressure on the rhythm of the heart, the results of previous investigators coincide tolerably well. They all found that, when the blood-pressure was increased, after separation of the heart from the central nervous system, there was either acceleration or slowing of the heart-beats; and less frequently the heart-beats were unchanged. As to the interpretation of these phenomena, however, there is much variance. Nay, Knoll and Navrocki have even denied the 'fact' of previous experimenters.

S. TSCHIRIEW, of St. Petersburgh (*Centralblatt für die Medicin. Wissenschaften*, No. 35), has again investigated this subject, and confirms the results of former experimenters (Ludwig, Thiry, Bezold, E. and M. Cyon). He has discovered a new fact, namely, a very considerable and sudden slowness of the heart-beats during the increase of the blood-pressure, as well after section of the cervical nerves alone as after complete separation of the heart from the

central nervous system; a subsequent, sometimes very considerable, acceleration of the pulse after the cessation of the increase of blood pressure, on cessation of the pressure exerted on the abdominal aorta.

The conclusions at which the author arrives are the following: 1. Considerable and rapid variations in the blood-pressure can change the rhythm of the isolated heart. 2. Every considerable and rapid increase of blood-pressure can directly excite both inhibitory and the motor cardiac ganglia, by increasing or diminishing the number of beats, the number seldom remaining the same. 3. The final character of the changes in the heart's rhythm during the increase of the blood-pressure depends upon the counterbalancing actions of both of the above-named factors. For a weak stimulation of the vagus can completely extinguish the phenomenon of a maximal stimulation of the nervus accelerans (Bowditch), so it is easily understood, why 4. in those cases where the inhibitory mechanism of the heart is sufficiently developed and excitable, the increase of the blood-pressure for the most part slows the heart's rhythm, whereby the accumulated excitation of the motor ganglia appears after the cessation of the increase of pressure, *i.e.* as subsequent acceleration. If, on the contrary, the inhibitory apparatus be feebly developed and exhausted by previous stimulation, then a very considerable increase of the pulse-beats may occur during the increased blood-pressure. 5. The more pronounced the acceleration of the heart-beats during the increase of pressure, the feebler is the subsequent accelerating effect, and *vice versâ*. 6. The heart receives from the accelerating nervous system a constant tonic excitation. The central ends of this system can be excited by increase of the blood-pressure but not by its diminution. In the normal condition, in addition to this direct influence, there is an indirect one; through the vagi and accelerantes. 7. Small doses of atropin paralyze the peripheral ends of the vagi (a fact already well known), but not the inhibitory apparatus itself. 8. The pulsus bigeminus is simply a slow pulse, in which the ventricle is peristaltically contracted. 9. Anacrotism of the pulse, as is the case in aortic insufficiency, or in the arterial stenosis, is the expression of peristaltic heart contractions, and not of variations in the elasticity of the wall of the vessel.—*London Med. Record*, Nov. 15, 1876.

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Malformations of the Cardiac Septa.

In the July number of the *Journal of Anatomy and Physiology* appears a translation of an analysis by Professor Stricker, of Vienna, of an exhaustive monograph by the veteran pathologist, Professor ROKITANSKY, entitled "Die Defecte der Scheidewände des Herzens." Any one who has been fortunate enough to study in the Pathological Institute attached to the General Hospital in Vienna, will readily understand from what wealth of material, not to speak of the accumulated observation of a long and busy lifetime, the learned professor has been enabled to draw. A but little known dissertation by Lindes (Dorpat, 1856) is, it seems, the only work in which similar statements as to the development of the heart, differing from such as are in general acceptance, are to be found.

The septum auricularum does not, as hitherto received, develop upwards, sickle-wise, so that a foramen ovale is left, but, beginning at the roof of the as yet simple auricle, extends thence forwards along the anterior and posterior walls. A stage, however, is reached in the course of this development, in which the septum may be represented as a curtain stretched between the upper end of the vertical ridges. In the lower half of this partition there is, at first, at all events, a foramen by which the two auricular cavities communicate; but by the forward growth of the septum this aperture is gradually closed up, so that each cavity comes to be shut off from its fellow. Before, however, the septum has become fused by its lower border with the roof of the ventricles, certain small apertures may be seen in it, in the chick, *e. g.* about the fourth day of incubation, which increase in number until about the sixth day of incubation; this curtain comes to resemble a beautiful lattice. Through this the blood-stream is filtered from right to left, causing it to bulge,

pouch-like, to the latter side. The meshes are gradually closed up, until at last but one fissure-like aperture, the foramen ovale, is left at the upper anterior border of the septum. In a human fœtus, of three months, the septum auricularum took the form of a membrane perforated sieve-wise, and supported upon a muscular frame, while at five months it had the appearance of a knitted work, *i. e.* seemed to be extremely thin at numerous points, as though here perforated. This appearance, together with a bulge towards the left, was witnessed in fœtuses of seven and eight months, and even in the newly born. Peacock ascribed a persistence of the embryonal lattice in the heart of the new-born child to a premature closure of the foramen ovale.

It is worth recording that in the fœtus of a horse this structure was seen to resemble a pouch, with perforations near its front border, supported upon a muscular frame, and bulging into the left auricle, thus closely resembling its homologue in man and in the bird. It is owing, moreover, to the septum auricularum that there is to be seen, even from the very beginning, a prominence lying above and behind in the vena cava, in such wise that a small portion of this vessel to the left is parted off as a *cul de sac*, open toward the left auricle, and originating the pulmonary veins.

The ventricular septum begins as a crescentic muscular ridge, with its convexity pointing upwards, inserted into the anterior, inferior, and posterior walls of the single ventricle, a foramen being thus left at its upper border, so that there is a stage in development in which the two cardiac septa together form a partition perforated by a figure-of-8 foramen. Of this the upper half is eventually filled up, as already stated, while the lower remains always patent, as the ostium aorticum.

As regards the bulbus arteriosus, this originally opens entirely into the right ventricle, then becomes divided by a special septum into an anterior pulmonary artery and a posterior aorta; at which stage both large arterial trunks belong to the right ventricle, while the left ventricle would be quite devoid of exit did not the foramen septi ventriculorum remain permanently patent. At a certain stage in development the left ventricle pours its blood into the right, whence mixed blood passes into both pulmonary artery and aorta. Afterwards the circumference of the foramen just mentioned grows gradually on the side facing the right ventricle, so that the aorta may be said actually to grow through the right ventricle. It will be readily understood, after the statement that the ventricular septum is divided into a posterior membranous and anterior muscular portion, this latter being further separable into a posterior and anterior part, that a deficiency of the posterior part of the muscular portion leads to an intercommunication between the two ventricles, while incompleteness of the anterior part causes a communication between the two large arterial trunks.

Malformations of the auricular septum may be divided into two distinct groups; the first including those determined by the development of the primary or provisional system, this being either entirely or partially wanting, *e. g.* below, having failed to reach to the septum ventriculorum; while the second group includes all defects arising during the transformation of the primary into the secondary septum, *e. g.* the vessels in the latter do not come to be filled up. After what has been already stated, it will readily be understood how a stenosis of the aorta must cause the blood of the left ventricle to accumulate to an excessive amount in the right ventricle, since both this vessel and the pulmonary artery originally open into the latter cavity. This repletion of the right ventricle must cause the corresponding auricle to become overfilled, and consequently bring about an enlargement of the interauricular foramen. If, however, development have proceeded as far as closure of the interventricular septum and consequent limitation of the aorta on the side of the right ventricle, the excessive distention with blood will be confined to the cavities of the left heart, those on the right side being only secondarily affected through the pulmonary circulation. When a deficiency, either partial or complete, of the septum ventriculorum is accompanied by a similar condition of the interauricular septum, an instance is here seen of a bilocular heart—a fish-like character; while, if the latter septum alone be fully developed, an example of a trilocular organ—reptilian in character—is afforded. Anomalies in position

of the large arterial trunks are invariable sequelæ of a complete absence of the interventricular septum.

With regard to stenosis and atresia of the pulmonary artery, Professor Rokitansky divides them into three groups, and combats the view hitherto taken that they are due to inflammation occurring in the fœtal heart; proving instead that they are rather malformations due to various degrees of arrest of development, which may later be modified by some inflammatory process. As for atresia of the pulmonary artery, this occurs whenever the deviation of the septum of the bulbus arteriosus, already described, from the normal arrangement is so considerable that this partition, the convexity of which is directed towards the pulmonary artery, becomes actually applied to the wall of that vessel, and fuses with it as far down as its mouth.—*Lond. Med. Record*, Nov. 15, 1876.

Materia Medica and Therapeutics.

Hydrobromate of Quinia.

In the *Journal de Thérapeutique* for August 25 and September 10 are three articles by Drs. RAYMOND, SOULEZ, and CHOFFÉ, bearing upon the therapeutic value of the hydrobromate of quinine. The first paper, that by M. Raymond, narrates the experience of the remedy in M. Gubler's service at the Hôpital Beaujon, where several cases of intermittent fever have been successfully treated with it. It is specially to its use in cases of this nature that the present paper is confined, and Dr. Raymond reserves for future consideration its influence in gastric derangements of a remittent form, in acute articular rheumatism, and some other affections.

Five cases of intermittent fever, four being tertian and one quotidian, are narrated, in all of which the remedy seems to have had a very rapid effect in stopping the attacks. In one case the fever had resisted the action of the sulphate of quinine, which though administered only in small doses, caused buzzings in the ears, vertigo, and other symptoms of cinchonism, but quickly disappeared after two injections of 20 centigrammes (3 grains) each of the hydrobromate.

These observations show unmistakably the powerful action of the hydrobromate administered by subcutaneous injection. The cases were all of an exceedingly well-marked character; the method of treatment employed consisted in the injection of 10 centigrammes (1½ grains) of hydrobromate of quinine in solution, twice in the morning and twice in the evening. This treatment produced the following results; in all the cases the intermittent fever was cured; in three very small quantities of the remedy (40 to 80 centigrammes: 6 to 12 grains) sufficed to cut short the attacks and prevent their return; in one case two grammes (30 grains) were required. Two of the patients who left the hospital ten days after the cure had a reaccession of the fever, but on being readmitted to the hospital and again placed under the treatment they were again rapidly cured, and this time definitively.

These facts force upon us the conclusion that intermittent fevers, even when very severe, are easily cured by subcutaneous injections of hydrobromate of quinine, and very often by very small doses of it. Its rapidity of action is remarkable, and to this rapidity is added certainty. With regard to the local effects of the injection, Dr. Raymond says that in over 300 injections no accident has occurred; very slight local swelling has sometimes been observed, but this has always rapidly disappeared without inflammation.

The hydrobromate has also been employed in the febrile gastric derangement, when there was marked access of fever towards evening; in some catarrhal fevers, in acute articular rheumatism, etc., and in all of them good results have been obtained, and the fever has rapidly yielded. It would therefore appear

that the sphere of action of the drug is by no means limited to paludal affections, but that it may advantageously take the place of the sulphate of quinine in all cases in which that remedy is indicated

Dr. Soulez's paper is devoted to a consideration of the precautions necessary to avoid local accidents in hypodermic injections, and of the harmlessness of injections of hydrobromate of quinine.

He has practised injection 116 times, on 32 patients, the subjects of acute attacks of intermittent fever, or of attacks appertaining to that form of special anæmia described under the name of paludal cachexia. In 90 of the cases 10 centigrammes were injected, in 25 of them 20 centigrammes, and in one 30 centigrammes. In the 10 and 20 centigramme doses some very slight pain was caused at the moment when the liquid raised the skin, and in one of the 20 centigramme cases slight inflammation of the dermis was produced. The injection of 30 centigrammes caused an erysipelatous inflammation about a square decimetre (3½ square inches) in size.

Dr. Soulez proceeds to say that in cases where great alteration in the organism exists, as the result of severe fever, typhoid for example, or where there is prolonged suppuration or pulmonary phthisis in an advanced stage, the practice of injections must be forbidden.

The precautions necessary to be observed in the injection of the hydrobromate are as follows: The passage of the needle through the skin should be as direct as possible; the point of the needle should be carried into the cellular tissue at a certain distance from the point of entry. The injection should be made very slowly, and the finger should rub gently so as to diffuse the liquid: the needle must be withdrawn very gently and slowly; before it leaves the tissues it should be gently raised, and the skin should be pressed by the finger on the canula, and the finger should remain applied for some seconds. To sum up, it appears that the injection of hydrobromate of quinine in doses of 10 centigrammes is absolutely innocuous to the cellular tissue; and the same will probably be the case with doses of 20 centigrammes, though it will be prudent at present not to go beyond this.

In the paper of Dr. Choffé, the author narrates his experiences with the drug in Algeria, Cochin China, and India. He has employed the drug in four different classes of cases: 1. In paludal fevers; 2. In neuralgia of a similar origin; 3. In internal congestions; 4. As a sedative. He has only employed the salt in the form of pill or solution, and has not administered it hypodermically. In miasmatic fever Dr. Choffé has used the hydrobromate in about thirty cases and has found it superior to the sulphate in the fact that the dose is smaller, cinchonism absent or very slight, and that vomiting when present has always quickly ceased. In intermittent neuralgia, also, he has found it act much more rapidly than the sulphate, and in some cases it has been effectual where the sulphate had failed. It is, however, above all as a sedative in febrile affections that Dr. Choffé considers the hydrobromate valuable. In hectic fever accompanying phthisis and in articular rheumatism, acute and chronic, he has by its aid procured good nights with sleep. He also employed it in an epidemic of scarlatina with admirable calmative effect.

Dr. Choffé concludes by expressing his opinion that in hydrobromate of quinine the physician has a most valuable remedy, gifted with febrifuge qualities equal to any previously known, and uniting with them a calmative power superior to the sum of the substances composing it.—*London Med. Record*, Nov. 15, 1876.

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The Physiological Action of Quinia.

According to N. Jerusalimsky (Berlin: Hirschwald, 1875, and abstract in *Centralblatt für die Medicinischen Wissenschaften*, No. 26, 1876), quinine given in small and medium doses (1 to 5 grains) always causes in dogs (rabbits and frogs are less suited for these experiments) an increase in the frequency of the pulse; it may be even doubled and more. Variations occur—but it never falls under the normal. The pulse sinks rapidly just before death. The blood-pressure, on the contrary, has in general the tendency to fall; only after each

injection there is a short period, where, with variations, it rises somewhat; then it gradually falls under the normal, though not far under, as long as no large doses are given. Large doses (20 to 25 grains) cause the pressure to sink rapidly and generally at once, but the frequency of the pulse generally after a short acceleration. The acceleration of the pulse, as is shown by special experiments (section of the vagi, of the spinal cord at different heights), is the result of a depression or paralysis of the regulating and excitation of the excito-motor nervous system.

The condition of the blood-pressure—with medium doses a short increase lasting between twenty and sixty minutes, then sinking, notwithstanding increased pulse-frequency—is explained by the author through a complicated nerve-action. The increase is caused by paralysis of the regulating and stimulation of the vaso-motor apparatus. That the vaso-motor centre in the medulla participates is supported by this, that after its destruction the increase is only feebly expressed. The effect of quinine on the vessels was ascertained by direct observations on the frog, and specially by the experiments on the spleen to be presently cited. After the excitation of the vaso-motor centre paralysis follows very rapidly, which affects the peripheral vessels, the excito-motor cardiac ganglia, and the cardiac muscles. After large doses, the heart itself does not reply to direct stimulation. The conditions here mentioned are those which follow medium doses; after small doses the tonic action, after large, the paralytic, is more pronounced. In man, the author after a moderate dose (10 grains) observed acceleration of the pulse, and increased heart-beat, which in one case increased to palpitation. The cause of the difference in the results between his and other authors, the author seeks to ascribe to difference in the animal employed.

The respiration is always increased by small doses, rendered slow by large doses, and also irregular with rapid following asphyxia. This action arises from the effect on the respiratory centre. The hyperæmia, and even the hæmoptysis, observed by some authors after large doses of quinine, are probably due to paralysis of the vaso-motor centre by the quinine.

The action on the temperature was not constant throughout. In most experiments it sank (at most 1.5° Cent. 2.7° Fahr.); in other cases it rose, and this after large doses, and in other cases it varied little from the normal. The author explains these results by the action of quinine on supposed nerve-centres. After section of the spinal cord, 1, between the sixth cervical and first dorsal vertebra there was pronounced increase of temperature (3° to 4° Cent. 5.4° to 7.2° Fahr.); 2, in the region of the second dorsal vertebra the reverse; and 3, under the second to the sixth dorsal vertebra, only slight modifications from the normal. The author assumes the existence of a heat-exciting centre, opposite the second dorsal vertebra, and a heat-regulating centre, between the sixth cervical and first dorsal vertebra, which influence the exchange of material through trophic nerves. The author explains the modification in temperature, by the relation of quinine to these two centres. The increase after large doses would therefore be produced by paralysis of the regulating centre.

The rapidity of the blood-current (investigated by Ludwig and Dogiels' Stromuhr) is much slowed by quinine, in the proportion of 1 : 2 and more. This phenomenon is specially to be ascribed to the paralysis of the vaso-motor centre, for after its destruction quinine can only produce a very slight retardation.

With regard to the effect of quinine on the colourless blood corpuscles, the author confirms the statements of Binz and his scholars. He also observed cessation of the amœboid movements; emigration and diminution in the number of these bodies. Further, he observed that the corpuscles which had emigrated had for the most part a single nucleus, whilst previously the greater number were multinucleated. Like Manassëin, he observed that the red corpuscles became larger under the influence of quinine.

Confirming Mosler, he observed also the diminution in the size of the spleen; the organ becoming at the same time tougher, granulated on the surface, and of a brighter colour. After section of the splenic nerves (splenic plexus, or

semilunar ganglion or splanchnic) or of the spinal cord, which produced of course a considerable swelling of the spleen due to paralysis of the vaso-motor nerves, the effect of quinine still occurred, though to a much less extent. It therefore depends primarily on the effect of the alkaloid on the peripheral nervous and muscular elements of the spleen, and secondarily on the splanchnic and central nervous system.—*London Med. Record*, Nov. 15, 1876.

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The Local Action of Chloral Hydrate.

In an article in *L'Independente*, No. 6, 1876, Dr. Guido Tizzoni of Pisa observes that the first effect of the application of solution of chloral hydrate to parts deprived of epidermis and epithelium is a transient irritation, varying in degree with the strength of the solution. This is followed by an anæsthetic action, in regard to which the observations of Drs. Coignard, Horand, and Puech, have been confirmed by the author.

The irritant action favours the development of cellulo-vascular granulations, and accelerates the cicatrisation of solutions of continuity. The chloral acts also as an astringent, and as an antiphlogistic. The irritant action, which is generally of brief duration, having ceased, there is in a few hours an arrest of the inflammatory processes, including suppuration: this appears due to the retardation of the circulation and the constriction of the capillaries, as well as to minute coagula and embola, which are found in the vessels and cut off or diminish the local supply of blood—a fact which has been established by the experiments of the author and of Dr. Fogliata.

The most important properties of chloral in surgery are those which it possesses as a disinfectant, antiseptic, antiputrescent, and antifermentative remedy. The author has used it for the preservation of flesh, milk, urine, etc.; no change being perceived at the end of two months. He recommends chloral in ordinary surgical practice, as a preservative against local and general infection, and as a restrainer of suppuration.

He describes the experiments and clinical observations which he has made with regard to the action of chloral, especially as an antiputrescent. The ultimate results were always the same, differences depending only on the amount of chloral used. The solution which he employs is one of ten parts of chloral in fifteen of water.

He has treated, both in hospital and in private practice, many cases of acute and chronic urethritis with injection of chloral hydrate, in the manner recommended by Parona, and has found the result to be rapid cessation of the discharge, and cure of the disease without complications.—*Lond. Med. Record*, Nov. 15, 1876.

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Carbolized Camphor and its Therapeutic Applications.

Dr. Soulez, of Romorantin, has a paper on this subject in the *Bulletin Générale de Thérapeutique*, Aug. 30. Desiring to combine the valuable properties of carbolic acid and camphor, and founding his proceedings on the property possessed by certain acids of liquefying camphor, Dr. Soulez poured 2 grammes (30 grains) of carbolic acid solution (in the proportion of nine of carbolic acid to one of alcohol) on 12 grammes (180 grains) of camphor in powder, in successive portions, taking care to keep the mixture agitated. This produced a liquid of a syrupy consistence. Carbolic acid dissolves a larger quantity of camphor than that just mentioned, but in practice Dr. Soulez contented himself with a solution of 2.50 grammes (37½ grains) of powder for 1 gramme (15 grains) of acid. The product thus obtained is an oleaginous liquid with the combined odour of camphor and carbolic acid, which boils at a slightly elevated temperature without decomposing, does not mix with either water or glycerine, is decomposed by concentrated alcohol with a deposit after some hours of crystals of camphor, is miscible in all proportions with olive and almond oils, if poured in a boiling state into cold water immediately solidifies into a mass, and produces a red colour on the addition of nitric acid.

For dressings, Dr. Soulez uses mixtures of a twentieth part of carbolized

camphor, either with olive oil or with infusion of saponaria (100 grammes of saponaria leaves with 1000 grammes of water) which makes an emulsion. A square of wadding soaked in the mixture of carbolized camphor and olive oil is placed in contact with the wound, and over this six other squares soaked in the emulsion of carbolized camphor and infusion of saponaria. To prevent evaporation, these are then covered with a thin layer of gutta-percha tissue, and the whole is secured by a piece of dry wadding as a bandage. It should be added that the whole wound, whatever be its nature, is washed before being dressed, with the emulsion. Thus applied, says Dr. Soulez, this dressing realizes all the favourable conditions inherent in Guérin's and Lister's method without its inconveniences. Usually the dressing is renewed every six days, sometimes being left in its place ten days, and up to the present time not the least irritation of the skin or of the wound has been observed, which could be attributed to contact with the carbolized camphor.

Dr. Soulez then proceeds to narrate some cases in which this preparation was successfully employed, and concludes by drawing attention to the following as the advantages derived from the employment of the carbolized camphor: 1. Diminution in reaction after great operations; 2. Cessation or lessening of pain; 3. Less abundance of suppuration.—*London Med. Record*, Nov. 15, 1876.

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Iodine and its Preparations in the Therapeutics of Infancy.

In an exhaustive clinical lecture on this subject, delivered at the Paris Hospital for Children (*Moniteur Thérapeutique*, August 7), M. Jules Simon lays particular stress on the following points: Tincture of iodine should not be applied pure in tubercular children; it should be diluted either with glycerine or with some unguent. Neither iodide of potassium nor iodide of iron should be given to children under two years of age, except perhaps in cases of acute hereditary syphilis, where small doses may be administered. It may be given to the nurse, if the child have not been weaned. Older children bear the drug well. Those who are especially benefited by it are patients robust in appearance, but with soft inelastic flesh and with manifestations of incipient scrofula. Iodoform is of great service in cases of ozæna and scrofulous wounds. Albuminuria has been observed by M. Simon in a large number of cases to follow paintings of the surface with tincture of iodine, especially when applied to eruptions. Iodide of potassium produced the same result, but in a smaller degree. On this head, further investigations are promised.—*London Med. Record*, Nov. 15, 1876.

Medicine.

Treatment of Leucocythæmia and Allied Diseases by Phosphorus.

At the meeting of the Clinical Society of London held on the 24th of Nov. (*Lancet*, Dec. 2, 1876), three papers were read bearing on this subject.

Dr. Gowers read notes of a case of lymphatic leucocythæmia treated by phosphorus. The case was that of a lad, aged sixteen, a patient of Dr. Wilson Fox, in University College Hospital, and afterwards for a time under the charge of Dr. Gowers. He presented extensive glandular enlargements in the neck, axillæ, and groins, and evidence of a large mass in the mediastinum. The spleen was slightly enlarged and the temperature was uniformly raised several degrees. The blood presented a large excess of white corpuscles; their proportion to the red was as one to four. One hundred and four were counted in one field. The glandular enlargements had been noticed only three months. During a fortnight of expectant treatment little change was observed. Phosphorus was then commenced—one-thirtieth of a grain three times a day. A

week's slight improvement was followed by an increase in all the symptoms, due apparently to some unwise exposure; but during the second fortnight of the phosphorus treatment there was a marked diminution in the number of white corpuscles. At the end of the fifth week they were reduced to a third of the original number, and the external glands were smaller and harder. A trace of albumen appeared in the urine, and, on account of obstinate diarrhœa, the phosphorus was omitted. The improvement in the special symptoms continued, and a week later only twenty-four white corpuscles could be counted in the field of the microscope, and the dulness produced by the mediastinal mass had sensibly diminished. The albumen in the urine, however, increased, fatty casts were found in it, and general œdema came on. The temperature fell, the patient became weaker, and finally died from asthenia, the number of white corpuscles showing to the last a progressive diminution. At the post-mortem examination, besides the external glands which could be felt, masses of agglomerated glands occupied both the anterior and posterior mediastinum. In front the mass occupied, above, the position of the thymus, and was adherent to the rib-cartilages and to the left lung; a still larger mass in the posterior mediastinum lay around the trachea and aorta, and had perforated the pericardium. The abdominal glands were also enlarged. Most of the glands were hard and fibrous, or else caseating. Under the microscope all showed lymphatic overgrowth and abundant leucocytes. In some it was undergoing fibroid, in others fatty degeneration. The spleen weighed thirteen ounces and a half; the Malpighian bodies had undergone lardaceous degeneration; it contained some caseous infarctions; its tissue was infiltrated with leucocytes. The liver was slightly enlarged, and contained abundant minute growths, most of which were undergoing fatty degeneration. The kidneys were large and pale, and their tissue presented general granular and fatty degeneration, with a few leukæmic growths. The marrow of a tibia was abundant, and consisted of leucocyte-like cells massed together. Dr. Gowers drew special attention to the degeneration in the glands and in the liver, which seemed to be indicated during life by the diminution in their size, and this coincided with the improvement in the state of the blood. The spleen presented no degeneration which could be associated with the diminution in the white corpuscles, since the Malpighian follicles are believed not to be specially concerned in the leucocythæmic process; hence it was probable that the leucocythæmia which existed was due to the glandular overgrowth, and not to the spleen. Renal disease was a rare complication of leucocythæmia, and it was further remarkable in this case from the acuteness of the process and the early evidence of fatty degeneration. What effect could be ascribed to the phosphorus? The known influence of phosphorus is to cause fatty degeneration, the condition found abundantly in this case. But such degenerations have occurred in cases in which no phosphorus was given, and with so acute a course and elevation of temperature degenerations are likely to occur. The process may have been hastened by the phosphorus, but if so the drug must be suspected of an influence on the kidney degeneration. In conclusion, Dr. Gowers said he had brought forward the case rather as suggesting points for future observation than as itself settling the questions it raised.

Dr. GREENFIELD read notes of a case of Hodgkin's disease, with increase in the white corpuscles of the blood, treated with phosphorus. The patient was a young woman, twenty-six years of age, who had never been strong, though suffering from no special ailment until about two years before, when she attended as an out-patient at St. Bartholomew's Hospital under Dr. Duckworth for amenorrhœa. She stated that she had, at the same time, some glandular enlargement in the neck, but this appears to be doubtful. Some enlargement of the glands in the neck was noticed about January, 1876, and from that time there was complete amenorrhœa and gradually increasing debility, which at the last led her to seek advice. She was first seen by Dr. Greenfield at the beginning of May, and from that time till her death was under the care of Dr. Rogers, of Old-street, Dr. Greenfield seeing her in consultation with him. When first seen she was greatly emaciated: there was a mass of enlarged glands on the right side of the neck at the upper part, with some enlargement

behind the sterno-mastoid; on the left side was corresponding though less enlargement, and there were also enlarged glands in the right axilla and in both groins. The patient suffered from hectic fever, with frequent perspirations. There were also curious attacks of dyspnœa, lasting a few minutes, which came on suddenly, often preceded by pulsation of the right carotid artery; then she suddenly became pale, half-unconscious, the respiration becoming very laboured and almost entirely abdominal. The right pupil was sometimes contracted during or after the attacks, and profuse perspirations frequently followed them. The spleen appeared to be slightly but not notably enlarged. The blood was not examined until later. Having in view the important results gained by Dr. Broadbent and Dr. Wilson Fox in leucocythæmia by the employment of phosphorus, Dr. Greenfield thought it would be desirable to try its effect in a disease which presented some analogies with it, and $\frac{1}{60}$ of a grain of phosphorus was therefore given three times daily in pill, and was continued for six weeks. Ten days later the blood, examined with a high power, showed a decided increase in the number of white blood-corpuscles, which appeared to be in the proportion of one white to fifteen red. There were also other white corpuscles smaller than usual, and a number of microcytes. The glandular swellings increased somewhat rapidly, and in the middle of June there was a large mass in the right axilla, the swellings in the neck had greatly increased, and there were masses of enlarged glands in the groins. The febrile attacks and perspirations continued unabated, and the patient became extremely emaciated and prostrate. The temperature, taken pretty regularly three or four times in the twenty-four hours, presented remarkable variations, the daily range extending over from four to six degrees Fahrenheit, and the elevation occurring very rapidly. On one occasion a rise from 98° to 103° was observed in four hours, and from 99° to 103° in five hours. The highest temperature observed was 105.5°, but temperatures of 104° to 105° were frequent, the highest usually occurring towards evening or at night, but with no great regularity. The patient lived for about four months, dying early in August. During the greater part of that time the glandular enlargements increased, the emaciation was progressive, and after a temporary improvement the dyspnœa became a more or less persistent symptom. Towards the end of life the glandular swellings decreased in size, and some of them entirely disappeared. The temperature continued high, but during the last week of life it became low, rarely rising above 101°. Post mortem, there was found a mass of enlarged and indurated glands in the upper part of the right side of the neck; enlargement and induration of the bronchial and mediastinal glands, the mesenteric and lumbar glands greatly hypertrophied. There were two smallish nodules of new growth resembling indurated lymphatic gland in the structure of the liver. The spleen was but slightly enlarged, and apparently free from patches of new growth, but was too much decomposed to permit of certainty on the point. There were scarcely any other marked visceral changes. Dr. Greenfield observed that the case was clinically a typical example of Trousseau's "adenie," "anæmia lymphatica," or "Hodgkin's disease." He thought that the increase in the proportion of white blood-corpuscles was not sufficiently large to allow it to be designated as a case of leucocythæmia, nor were there any of the usual symptoms of that disease, such as epistaxis or other hemorrhage. At the same time the condition of the spleen was different from that which was observed in many cases, and regarded by Dr. Wilks as one of the essential anatomical lesions of Hodgkin's disease. The clinical features, however, were most typical: glandular enlargements, great and progressive, a peculiar anæmia, progressive emaciation, with irregular and high temperature. The condition of the spleen in five other cases which had fallen under his observation presented considerable varieties; in only two did it present the typical characters of containing masses of new growth, aptly likened by Dr. Wilks to lumps of suet. At the same time, the condition of spleen observed was equally inconsistent with typical leucocythæmia. Probably the same must be considered an intermediate one, and "anæmia lymphatica" would be the most appropriate name, rather than Virchow's "leukæmia lymphatica." In commenting more particularly on the symptoms observed, the author remarked that the

earlier attacks of dyspnœa were probably due to pressure on nerves, the later to direct pressure on the trachea and bronchi by enlarged glands—a condition discovered post mortem. The phosphorus was observed to have had but little influence on the progress of the disease, the glandular enlargement continuing and increasing during its use; and the subsequent apparent atrophy of the glands being accounted for, in all probability, by their induration, a similar occurrence having been observed in other cases. Nor did quinine, which was given through a great part of the course of the case, appear in any way to prevent the febrile attacks. The other treatment adopted consisted merely in palliative measures.

Dr. GOODHART read notes of a case of Hodgkin's disease, treated by phosphorus. The patient, a female forty-five years of age, married and without children, was admitted into Guy's Hospital under the care of Dr. Pavy, on June 7th, 1876. There was no family history of rheumatism, gout, or cancer. The patient had suffered from three attacks of rheumatic fever when seventeen years of age. Since then she had some oppression in the cardiac region, and of late had been subject to chronic bronchitis. Six years ago she had an attack of "inflammation of the kidneys" without dropsy. Twenty months before admission she had a boil on her thigh, which bled freely on being opened, and she had lost much blood; ever since then she had been weakly and pale. Fifteen months ago she was under treatment for fistula in ano, and after leaving the hospital she began to suffer from dropsy, which lasted till her admission in June—twelve months. The glands in the neck and armpits were noticed to be enlarged, but the enlargement did not persist. On admission she was anæmic, and the lower extremities were anasarcous. Temperature 101.2°; pulse 128. There was a discharge from a sinus left by an abscess which had formed behind the right ear. There were crepitant râles at the bases of the lungs, and a loud systolic murmur audible at the apex and base of the heart, but not in the back. The liver was enlarged, and some resistance on palpation in the right lumbar region. The spleen was not manifestly enlarged. Examination of the blood showed 60 white corpuscles to 100 red. Thirteen days after admission, phosphorus treatment was commenced in doses of $\frac{1}{60}$ grain three times a day. On the 14th June there were 58 red to 42 white corpuscles. On the 16th the amæmia was less; urine not albuminous. On the 17th there were only 18 white to 100 red corpuscles in the blood; a few leucocytes being of normal size, but the majority were smaller than natural. The relative quantity of white corpuscles varied much, falling on July 7th to 10 per cent., and on the 8th they were not in excess of the normal proportion. Their size varied, and the total number of corpuscles also diminished, the blood being more watery at times. On Aug. 10th the cervical glands were enlarged. On the 16th they were still of large size, and enlarged glands were also to be felt in the right groin and in both axillæ. The temperature was never above normal, and the proportion of white corpuscles varied. On Aug. 21st the glands were all increased in size. The phosphorus, which for nearly three months had been given with perchloride of iron, was now given in combination with strychnine, and reduced iron administered instead of the perchloride. She then left the hospital for a few days, and was readmitted on Sept. 5th. She still remains under treatment, but has taken no phosphorus since her readmission, and has passed through an attack of acute pericarditis and pneumonia, the temperature never rising above 100°. The pallor and the condition of blood remain unaltered. Dr. Goodheart remarked that the precise nature of the case was still open to doubt. From the considerable glandular enlargement, it might be regarded as an example of Hodgkin's disease with an increase in the number of white copuscles. The variations in the condition of the blood were of interest; there being sometimes no excess, at other times a large increase, in the number of white corpuscles, which, as a rule, were extremely small in size. There was still much doubt as to the precise clinical or pathological significance of excess of white blood-corpuscles. This excess might occur in simple anæmia; in splenic leukæmia, where the cells were of normal size; and in the lymphatic form, where (as in this case) they were smaller than natural; whilst, again, other cases presented no excess of leucocytes, but only a quantity of

large granules. Regarding the blood as a fluid tissue, he would ask whether these variations in its constituents were not sufficient to constitute different diseases? There were all gradations between the cases of pronounced splenic leukæmia and the one recorded.

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Case of Sporadic Hæmophilia.

Dr. Thomas Barlow, Assistant Physician to Charing-Cross Hospital, reports (*Med. Times and Gaz.*, Nov. 25, 1876) the case of A. H., a man, aged twenty-nine, who, on the 11th of September, came to the out-patient department of Charing-Cross Hospital, complaining of having passed blood in his water. His urine, some of which he brought with him, was pale claret-coloured, and showed abundance of red corpuscles under the microscope; no other deposit. It was precisely the sort of urine which made one think of renal calculus. This, at first, seemed a likely cause, especially when it was noticed that he had some well-marked gritty tophi in the pinna of each ear. But it was found that he had no symptoms of renal calculus beyond the hæmaturia and slight aching in the loins. He had never had any colic or pain referred to the testicles, and he had never passed any gravel. He was a little below average height, fairly nourished, very florid, the small vessels of his face very full. Gums not spongy, but a hemorrhagic patch was seen on the hard palate. His pharynx flabby; voice weak and high pitched. Thoracic and abdominal viscera natural, so far as I could ascertain. Pulse rather full, 80. Joints natural. There were some hemorrhagic flea-bites on the shoulders, and also some small ecchymoses, caused, he said, by his scratching himself. On one calf there was an ecchymosis of some depth, the area of a shilling. This the patient could give no account of. Another such ecchymosis was made with a very moderate pinch. Blood examined under the microscope showed nothing abnormal; the red corpuscles were of good colour.

The ecchymoses led to inquiry into the previous history, which was as follows, obtained from the patient, and subsequently supplemented by the mother: His father had died, aged forty-five, having been ill two years, from consumption. Neither he nor any of his relations had suffered from immoderate bleeding. Patient's mother was one of seventeen children; none of these had suffered from bleeding. The mother herself had lost a great deal of blood at her labours, but had not bled at other times. She had had ten children, four of whom died in infancy. Of the remaining six, two girls are consumptive; of the four boys, the other three are healthy. None of her children had suffered from bleeding except the patient. He was a healthy baby. He was first noticed to bruise easily when he began to get about—viz., when two years old. He bruised especially about the thighs and legs; to a less degree on the arms. The least knock or pinch would bring out the bruises, but often "frightful places" would come out, as big as a five-shilling piece, without his knowing how they came. The "bruising" now is much less than it used to be. Patient attributes this to his taking great care of himself; but, as he is a lamplighter, he must be very often exposed to bruises, and it is noticeable that he does not bruise about the shoulders. With respect to bleedings from mucous membranes, patient does not remember any special nose-bleeding till he was twelve years and a half old. Then, one day, he bled from seven in the morning till two next morning, with only two hours' intermission. He frequently bled from the nose for six hours at a stretch after the above, but for the last four years the nose-bleedings have been much less frequent, and have seldom lasted more than half an hour. At the time when he was suffering in this way he says he always knew that he was going to have an attack, from feeling very heavy for three days before. There was nothing, however, in his appearance which led others to predict it. The blood was rather dark in colour; it always "congealed."

Gums.—He has had several teeth removed; there has not been any alarming bleeding on such occasions, but his gums have often bled spontaneously in the night. He has never coughed up any blood, nor has he vomited any.

Bowels.—When he was twenty-one, he had an attack of "purging," preceded

by nose-bleeding. Immediately the purging began he passed a large quantity of blood. He continued to pass it for two days, and says that during that time he went to stool every forty minutes.

Urine.—When six years old he passed some bright blood once with his water, the first thing in the morning. He says there was some clotted blood on the end of the penis, so that it may have been due to some injury. Did not pass any blood in his water again till he was twenty-four years old; was then overworked. He had no pain, except a very little in the loins. Passed thin, claret-coloured water for a fortnight. Three weeks before he came to the hospital, when I saw him, he had begun again to pass claret-coloured water. As I stated above, there had been no renal colic, but a little pain in the lower part of the back and the right shoulder. I will dismiss the hæmaturia by stating here that it suddenly ceased about four days after he came to me—that is to say, having lasted nearly one month. He was taking fifteen minims of liquid extract of ergot three times a day at the time when the hæmaturia stopped, but I do not pretend that this had anything to do with its cessation. His face was much less flushed, and he felt "brighter and more comfortable."

Joint Symptoms.—Patient never had any swelling in the knees till he was twenty-five. In the middle of the night pain came in one knee. He was hot, sweated a great deal, and could not move in the morning. Within a few days swelling had ceased in one knee, and gone to the other. He had severe pains in the groins and loins, and the feet swelled up on the outer and under side and on the top, but not the big-toe joints, and not the ankles. None of these places became "black and blue" subsequently. He was ill for a fortnight. He has had during the last five years three such attacks every year. These attacks have never lasted less than ten days or a fortnight; one, for which he was in Charing-Cross Hospital, lasted one month. In each attack he has sweated most profusely, and has been very hot.

The tophi in the ears, the patient says, have come within the last four years. They are painful when his joints get bad.

Remarks.—There can be no doubt that A. H. is the subject of hæmophilia, and, if the statements are to be trusted, of sporadic hæmophilia. If he inherits any hemorrhagic tendency, it has probably come to him through his mother. She lost a great deal of blood at her labours, but this was the only manifestation she presented. It is worth noticing that both she and her mother were rather prolific, which is often the case in hemorrhagic families. Whether this patient will start a hemorrhagic stock remains to be seen. He is married, and has one boy, aged ten months, who has not bled hitherto. Bleeding from the kidney is not common in hæmophilia. Dr. Legg has told me that he has only met with it in one case. Of course one cannot say that the patient has *not* a renal calculus. The tophi are in favour of a gouty condition. This appears to me to have supervened on the partial subsidence of his hemorrhagic tendency, so far as interstitial and mucous-membrane bleedings are concerned.

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Chronic Rheumatic Myitis.

Dr. UNO HELLEDAY says (*Nordiskt Medicinskt Arkiv*, 8de. Bd., No. 8) that but little is known definitely with reference to the pathological anatomy of this disease.

As for the symptoms, pain occupies the first place, in the opinion of the patients and that of the greater part of the physicians. This symptom is uncertain and generally indefinite. At first its character varies considerably; it scarcely ever remains the same in different individuals, and changes in the same patient, even disappearing from time to time. It does not always correspond to the part which is in reality attacked; it may be entirely wanting, etc. It may also depend on numerous other diseases. It is not rare, however, that a true myitis gives rise to pain in parts which are quite distant from the seat of the disease. It is probable that there is then a compression, exerted by the smaller portions of the muscles on the nervous filaments, and the symptom exhibits itself at their peripherical ends.

The sensibility of the diseased point to pressure has no further value. It exists in several other diseases, and may be wanting in myitis.

The function of the diseased muscle is most frequently impaired, but one may be entirely mistaken concerning this during life. The impossibility of using the muscles freely may arise from other causes, and, on the other hand, the muscular groups, which seem to be paretic and are really so, sometimes present no traces of inflammation. The source of this is much further removed.

The external swelling of the affected muscles is most frequently minimal or nul. It is by palpation, carefully performed, that a diagnosis is made. It is not necessary that the volume of the diseased portion of the muscle should be augmented, although this happens often enough; the characteristic changes refer rather to the consistence, and, above all, to the muscular elasticity. This resembles that of the muscle in the condition of contraction, and the diseased points may attain an almost ligneous induration, although the author has never in reality found the diseased muscle contracted. The diseased foci—for the disease in question quite frequently presents itself under this form—are less easily displaced with regard to each other and the intermediate healthy parts. It is necessary to know, however, that the consistence is not always augmented; it may be found normal and even diminished, but the want of elasticity is constant. This is the pathognomonic sign, but to appreciate it a thorough knowledge and a careful examination are necessary.

The muscles are rarely affected in their totality. The seat of the disease is most frequently found near the attachments. Sometimes one feels numerous nodosities scattered through one or several muscles, the intermediate substance being healthy. The more advanced the anatomical changes are, the less the patients complain in general of the sensibility to the touch. The rheumatismal callosities are as a rule not painful.

The treatment should be directed by the rule that we must, first of all, endeavour to diminish the morbid production, by causing its absorption.

Massage is the best remedy, because it acts directly on the diseased points, and it has a more certain influence on the absorbent organs, than any other remedy, internal or external.

In recent cases its effect is often miraculous; but even in older cases of myitis, which have generally been previously treated by many other means without a durable advantage, it gives a good result, provided the cure has not been rendered impossible by the destruction of the muscular tissue. It is necessary to continue the treatment by massage, not only until the pains have ceased, and the patient has recovered the free use of his muscles and believes himself cured, but even to the time when he is really restored and the last trace of the disease has disappeared. In inveterate cases this requires much time. Eight cases are detailed, illustrating the difficulties of the diagnosis and the triumph of massage.—*Medical Record*, Dec. 16, 1876.

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Camphorated Ether in Erysipelas.

Dr. CAVAZZANI gives the following formula in the *Gazzetta Medica Italiana Provincie Venete:* ℞. Camphor, 15 grains; tannin, 15 grains; ether, 2 drachms. This is painted every three hours, and sometimes oftener, over the affected parts. The author says that he has never seen this method fail, even in the most severe cases, in which ataxic and adynamic symptoms had already appeared. The fever soon diminishes, and the local erysipelatous process is arrested in two or three days.

In some cases of phlegmonous erysipelas, which Dr. Cavazzani had under his care, this treatment arrested the progress of the disease. Trousseau prescribed this drug only in cases of circumumbilical erysipelas in new-born children, and Guibout did not use this solution in phlegmonous erysipelas or in that affecting the face, fearing in the latter case that the meninges would become affected. In seeking an explanation of the action of the remedy, Dr. Cavazzani supposes that erysipelas is nothing else than a lymphatitis, and that the tannin exercises an astringent action on the cutaneous capillaries.—*London Med. Record*, Nov. 15, 1876.

Morphiomania.

Professor LEIDESDORF, in a paper read before the Imperial Royal Medical Society of Vienna, after remarking that several cases of morphiomania had been reported in the course of the past year, said that he thought that the relation of five cases which had occurred in his own practice would be of use as a warning against the too frequent use of the drug, and as a contribution to the knowledge of its physiological action. The first case was that of a lady, aged thirty-five, who for two years had suffered from the painful results of a perimetritis. Afterwards she herself injected morphia (as much as six grains for a dose), and fell off in health. The sudden withdrawal of the morphia was attended with considerable psychical irritation and severe diarrhœa; the patient, however, recovered in eight days, and was discharged cured four days afterwards. In the second case a man injected about four and a half grains of morphia daily to relieve pain in the region of the spleen. He sold his Pravaz's syringe in order to deprive himself of the remedy, but could not wean himself from its use. The sudden withdrawal of the morphia was attended with persistent loss of sleep, with hallucinations, irritability, diarrhœa, and collapse. He was, however, discharged in a few weeks. The third case was that of a high official who injected one and a half gramme (twenty-two grains) daily to relieve painful periostitis. He had profound melancholia, and attempted suicide. He was treated by baths and chloral-hydrate, and recovered; but relapsed and committed suicide. The fourth case was that of a man, aged thirty-one, who suffered from sciatica. Treatment at Gastein was not attended with success; and during four years he had used morphia in doses of thirty-seven grains subcutaneously, or forty-five grains internally. As the sudden withdrawal of the morphia produced alarming collapse, the quantity was gradually reduced; and under the use of chloral-hydrate, baths, wine, etc., he completely recovered in a few weeks. The fifth patient was a medical man, who wished to observe in his own person the effects of the use and disuse of morphia. He arrived at doses of twenty to twenty-five grains, became dull and sleepy, and could no longer do without the injections. Under the use of acetate of morphia he lost appetite, and had pains and abscesses; on many occasions (perhaps from injection into the veins) he had congestion of the head, difficulty of breathing, and formications over the whole body, lasting several seconds. After unsuccessful attempts to desist from the habit—sensibility being greatly increased by the sudden withdrawal of the morphia—a cure was effected in eight weeks by the gradual reduction of the quantity, until total abstinence from the drug was arrived at. The patient must be entirely under the control of the physician, as deception is otherwise certain; all the patients had their syringes and a supply of morphia for several weeks. A careful watch must be kept during the treatment (eight or ten days) to prevent attempts at suicide. The cure is aided by the use of wine, warm baths, and chloral-hydrate. Dr. Eisenschitz related a case under his observation, in which both the patient and the physician made repeated attempts to stop the practice, but without success. The daily dose was fifteen decigrammes (2.3 grains). The patient, a man aged sixty-seven, became stupid and almost completely lost speech. By persuasion, restraint, watching at night, the use of chloral-hydrate, etc., Dr. Eisenschitz succeeded in entirely stopping the use of the drug. During the first thirty-one hours of the treatment the patient took no food, was irritated during seven or eight days, and had severe diarrhœa. Dr. Winternitz said that, in cases of morphia mania, the lowering of the temperature by baths of 68° to 77° Fahrenheit was borne ill or not at all; while, on the other hand, the application of hot cloths along the cervical spine had some effect in reducing the desire for morphia.—*London Med. Record*, Nov. 15, 1876.

Insanity following Typhoid Fever.

In a paper read before a psychological association in Hanover, and reported in the number of the *Zeitschrift für Psychiatrie* for September, Dr. HEMKES gives an account and an analysis of twenty-six cases of insanity following

typhoid fever, which have been, during the last few years, under observation in the asylum at Hildesheim. Of these only seventeen are considered by the author to be undoubtedly due to the fever; in thirteen of them the mental symptoms were developed early during convalescence, and in the other four they appeared between three and twelve months afterwards, but the patients had never recovered from the weakness, emaciation, etc., which the disease had caused.

The psychoses produced by enteric fever present no special characteristics which distinguish them from mental affections brought about by other causes, but Dr. Hemkes has been unable to find any recorded instance of general paralysis following this disease. Of the above seventeen cases, eight are reported as melancholia, eight as mania, and one as primary dementia. Among the seventeen there were six recoveries, three remain under treatment, the prognosis being uncertain, and one was discharged much improved, and may have since recovered.

Short notes are given of the nine other cases, in which insanity followed *typhus abdominalis* after a period of from two to twelve or more years; as many writers hold that if there has been an attack of this disease in years gone by, it should generally still be regarded as a cause of insanity. Schlager and Jacobi, holding this view, have described the most frequent form of mental disorder under these circumstances as delusional insanity with delusions of persecution and hallucinations, and it is noteworthy that three of Hemkes' nine cases, in which the mental symptoms were not developed until after a considerable interval, took on this character. Among these nine cases there were only two recoveries.

As to the frequency of insanity caused by typhoid, Hemkes finds at Hildesheim only seventeen cases out of fifteen hundred to have been so caused; *i.e.*, rather over 1 per cent., or counting the other nine cases, about 1¾ per cent. Nasse has stated the proportion at 2 per cent. among a total of two thousand patients; other observers have found rather larger numbers, but Bergman at Hildesheim stated the percentage as 38.

Psychoses following enteric fever, as well as the delirium occurring during its course, are regarded by the author as certainly due to anatomical changes in the brain and its membranes. Different investigators are not at present unanimous as to what these changes are; one party maintains that the symptoms are due to persisting hyperæmia of the brain with its results, while Griesinger and others point to anæmia and exhaustion as the cause. Buhl has described an œdematous condition of the brain and membranes with hyperæmia, and he believes that atrophy of the brain is also present. Hoffmann also found œdema, and has described in addition a diffuse yellow and brown spotted colouration of the cerebral substance, caused by pigment granules in the ganglion-cells. In some cases these granules were seen even in the nuclei of the cells, and had apparently caused their disintegration. This leads Hoffmann to describe the process as parenchymatous degeneration. These and other observers have also found considerable quantities of fat and pigment granules collected in the walls of the smaller cerebral vessels. The latest researches on this subject seem to be those of Dr. Leo Popoff (*Virchow's Archiv*, Bd. lxiii.). He examined twelve cases which died from the second to the fourth week of typhoid fever; the only appearances presented to the naked eye were a slight fulness of the vessels and occasional œdema; but microscopical examination of the cortical substance revealed an infiltration of the brain-substance with small cellular elements resembling lymph-corpuscles: these not only surrounded the ganglion-cells, but had often penetrated into them, in some cases so far as to exercise evident pressure on the nucleus. Popoff considers, then, that a number of the so-called migratory corpuscles enter the ganglion-cells, causing, in many cases, division of their nuclei, division of their protoplasm, and often destruction of the cell itself. A number of similar corpuscles were also found in the perivascular lymphatic spaces, and in the spaces surrounding the nerve-fibres. Like other observers, he noticed a deposit of fat and pigment granules in the walls of the vessels, and beyond this, was often able to make out, in the smallest vessels, products of proliferation. The cells in the capillary walls were seen to

be in a state of division, and were present in great numbers; repeatedly in the lumen of the vessels the white blood-cells were extremely numerous, sometimes outnumbering the red cells, and in a few instances the vessel was filled with white cells only. All these appearances are considered to imply acute inflammatory mischief. This being so, says Hemkes. we can easily understand insanity following typhoid fever. He further says that probably cases in which only a small degree of anæmia or hyperæmia, with or without slight œdema of the brain and its membranes, exists, will recover under suitable treatment, but that where destruction of the ganglion-cells and considerable vascular changes have taken place, an incurable psychosis will probably be developed.

In a discussion which followed the reading of this paper, it was specially remarked that the delirium of typhoid fever, together with its surroundings, has not yet been sufficiently observed and described.—*London Med. Record*, Nov. 15, 1876.

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Syphilitic Affections of the Brain.

Dr. W. H. Broadbent, Physician to St. Mary's Hospital, London, publishes in the *Lancet* (Nov. 25, 1876), the cases of disease of brain due to syphilis which he has seen since he delivered, three years ago, the Lettsomian Lectures on Syphilitic Affections of the Nervous System.

The narrative of the cases is preceded by a few general remarks. These relate to—

1. *The period at which syphilitic affections of the nervous system are met with.* This is usually at a late period of the disease, and it may be many years after the primary lesion The longest I have known is forty years. Dr. Buzzard, however, finds that in a large proportion of cases in which the nervous system is affected the first attack is within five years. In rare instances acute inflammation of the brain or cord, sometimes attributed to tuberculosis, may come on about the time of the first outbreak of constitutional manifestations. More important, however, is—

2. *The stage of the disease at which the nervous system is liable to suffer.* As is well known, the lesions occurring at different periods of the same case of syphilis may be so entirely different in character and tendency that only prolonged experience warrants us in considering them as part of the same disease; whence the division into "secondary" and "tertiary" stages. Since, however, "tertiaries" may appear early, and "secondaries" persist late, and the line of demarcation between the two is far from being hard and fast, many observers do not recognize the distinction between them, and it is not uncommon to hear the phrase, "If a man has syphilis he has syphilis." The difference exists nevertheless, whether it is marked by a name or not, and as it is such as to influence treatment, I consider it important to retain the distinctive names. Syphilitic affections of the brain, then, for the most part belong to the tertiary stage (this term "tertiary" applying, however, not to the time, but to character of the lesions), and are associated with gummata in the skin, muscles, and viscera, with nodes and disease of bone, and with destructive ulceration of the soft palate, skin, etc. As has been said, exceptional cases occur in the early part of the secondary period.

3. *The character of the lesion* is accordingly such as is met with in tertiary affections of other parts, and its progress is usually gradual. The lesions, again, are often multiple, rarely symmetrical. Syphilitic disease giving rise to cerebral symptoms may have its origin in the cranial bones and dura mater, or in the pia mater, or in the cerebral bloodvessels; and it is important that the seat of the lesion should be made out, since this will greatly influence the prognosis. If the dura mater or the bones are affected, recovery will usually be slow and relapses frequent, and if an artery has been blocked up, either by changes in its walls or by pressure of a growth outside it, the consequent softening, should the obstruction last long enough to produce this result, will remain, even though the cause may be removed.

4. It should be borne in mind that syphilitic visceral lesions may occur—I might almost say are especially liable to occur—when the secondary manifesta-

tions have been only slight. We must not at once accept a denial of syphilis as conclusive, but examine the throat, skin, and bones for evidences, and make detailed inquiries respecting all previous ailments. This is especially necessary in the case of women. Even men, with no motive or desire for concealment, and ready to confess venereal accidents, will refuse to acknowledge syphilis, of which they bear evident tokens, and I am convinced that medical men often disguise the disease to their patients under some pseudonym. Women are of course, as a rule, kept in ignorance, and the few who know that they have suffered from syphilis have usually the strongest reasons for concealment of the fact, so that, as I have frequently said, it is useless always, and often cruel, to ask a woman in so many words if she has had syphilis. In women, again, we have the fact that when the disease is communicated, not directly from the husband, but indirectly through a fœtus begotten by a syphilitic father, the very first syphilitic manifestations may be tertiary visceral lesions. I have, for instance, met with cases, such as the following, in a station of life and under circumstances which absolutely exclude the idea of irregularities on the part of the wife before marriage. A healthy young girl marries a man who has had syphilis, has a miscarriage, or a series of miscarriages, perhaps at so early a period of gestation that she is uncertain whether pregnancy ever existed. Her health becomes impaired, but she presents no symptoms which the medical attendant recognizes as syphilitic till ten or twelve years after marriage. She has then paralysis of cranial nerves, with marked syphilitic cachexia, nocturnal pains and nodes.

5. The only other subject on which I desire to remark is the treatment and its results. The treatment is that familiar to all—iodide of potassium, which in my practice is sometimes associated with, and almost always concluded by, a mild course of mercury. The average dose of iodide of potassium is from twenty to thirty grains three times a day, which is reached by rapid steps from six to eight grains given at first. The larger doses are necessary. I have repeatedly seen relapses, when the dose has been at ten or twelve grains, checked and cured by a rise to twenty-four or thirty-six grains. I have given a drachm every four hours for a short time; and one patient came to me who had for two or three months taken this quantity three times a day with advantage, under the direction of his family medical attendant, who had "bettered" my advice after a previous consultation with me. On the other hand, I have met with cases in which a single grain of iodide of potassium produced great depression and other injurious effects; in these one-quarter or half a grain may do all the good, or iodide of sodium or of ammonium may be tolerated.

When I give mercury at the same time with iodide of potassium, it is in the form of biniodide or bichloride; when the potash salt has been left off, either one of these or hydrargyrum cum creta with quinine.

As regards relapses, it is true they are common, and a constant look-out and guard against them are necessary; but my experience leads me to conclude that the disease can be worn out, so to speak. I see or hear of from time to time a large proportion of the cases I reported in my lectures. Most remain well; some I have lost sight of; but I have heard of no death.

Mr. Hutchinson has suspected iodide of potassium of giving rise to Bright's disease. I have met with nothing to support this idea; indeed, I find in this salt one of my most trustworthy remedies for the high arterial tension which often precedes the establishment of contracted granular disease of the kidney, or rather for the condition of blood and tissues which I consider to be the cause at once of the arterial tension and of the renal mischief.

My experience does not yet extend over a sufficiently long period of time, or embrace a sufficient number of cases, to decide this point; but I may quote one example of immunity from this evil consequence after prolonged administration of the drug, and of complete recovery from severe syphilitic disease of the brain. It is the case of a man whom I first saw in 1864, who had been maniacal, and who at that time was quite imbecile, and suffered from frequent attacks of grand and petit mal. He took iodide of potassium at intervals for seven years, when I lost sight of him and thought him dead. I met him, however, in the street a short time since, and learnt from him that he had remained quite well, and was earning a living for himself and a large family.

Case of Numerous Cysticerci of the Brain and Cerebral Meninges.

Dr. Luigi Mazzotti describes in the *Revista Clinica*, 1876, the case of a woman, aged thirty-two, who, having previously had no illness of importance, had, after a natural labour in June, 1874, abundant metrorrhagia, which was treated by repeated cold applications to the abdomen. Early in August she began to show symptoms of mental disturbance, consisting chiefly in hallucinations of sight. Afterwards, she had convulsive attacks, but preceded by premonitory symptoms; these were of short duration, and left the patient extremely exhausted and weak. Her moral character was changed; she became somewhat irritable, and her intellect and memory were observed to be weakened. These symptoms having continued several months, in May, 1875, she was seized with violent pains in the head, affecting first the vertex, then the nape of the neck. As there was no improvement, she was admitted into the hospital at Bologna on July 23, 1875.

On admission, she appeared to be well, fairly nourished and florid; there was nothing abnormal in the form or size of the head, nor any appreciable lesion of any other part of the body; her senses were perfect; the pulse and temperature normal. She answered questions correctly though rather slowly; and herself acknowledged that her ideas were rather confused and her memory weak. Her speech was slow and in cadence, but accurate and free from stuttering. She preserved her appetite well, and her digestion was good. She had pain all over the head, but it was most severe at the nape of the neck. The paroxysm of pain came on at all times of the day and night without apparent cause, and were only temporarily relieved by hypodermic injections of acetate of morphia and by the internal use of chloral.

On the second day after her admission into hospital, she had a convulsive attack attended with foaming at the mouth and loss of consciousness. She had no more attacks of the kind; and on August 2 she died suddenly. On *post mortem* examination, the dura mater, on both the vault and base of the skull, was found studded with numerous cysticerci; the arachnoid and pia mater were much congested, and adherent. The brain was literally occupied with cysticerci; they were found in both peripheral and the central parts, in the upper part and in the base, in the white substance, gray substance, and great ganglia. None were found in the cerebellum, medulla oblongata, eye or muscles, nor in any other part of the body. The thoracic and abdominal viscera were healthy, except that the lungs presented old deep cicatrices at their apices.—*London Med. Record*, Nov. 15, 1876.

Alterations in the Mucous Membrane of the Stomach consequent on Lesions of the Brain.

Dr. Brown-Séquard (*Progrès Médical*, 1876, No. 8) records, that, after injuries of the corpus striatum, crus cerebri, or spinal cord, softening and ulceration of the gastric mucous membrane occur; hemorrhage generally after injury of a certain part of the pons Varolii. There is no hemorrhage after paralysis of the voso-motor nerves; on the contrary, the arteries and veins contract, and the blood stagnates in the capillaries, which then rupture.—*London Med. Record*, Nov. 15, 1876.

Effects of Lesions of the Brain upon the Viscera, and of Diseases of the Viscera upon the Brain.

Dr. Eugene Dupuy, in some remarks before the New York Medical Journal Association (*Medical Record*, Dec. 16, 1876), said that, notwithstanding the almost innumerable cases of diseases of the brain where autopsy always discovered lesions of a grave nature in the lungs, it is not more than six years ago that attention has been called to this most interesting point of pathology by my friend, Brown-Séquard. He showed that lesions experimentally produced in the base of the brain in guinea-pigs almost invariably give rise to hemor-

rhage in the lungs, in the heart, the stomach, the supra-renal capsules, the kidneys, the liver, and to congestion of the intestines. Except a few observations scattered in French and English periodicals, there is no mention to be found of these facts which are of such great importance for a correct prognosis and rational treatment of cerebral hemorrhage. Every one knows that in the majority of cases these hemorrhages are not fatal *per se*. Although I speak more particularly of cerebral hemorrhage, I shall comprise under such heading all diseases of the brain, such as tumours, abscesses, fractures of cranium, inflammation of part of a lobe or of several parts, etc.

The facts which experiment has disclosed, bearing on the lungs, for instance, are the most interesting perhaps, because of the serious nature of a hemorrhage in lobes of the lungs, following and caused by an affection of the cerebrum. Œdematous patches of the lung tissue, sub-pleural large ecchymotic suffusion of blood, congestion of the lungs, are the usual consecutive lesions of the chest. The relation between the lung lesion and one in the cerebrum is so close in the human species, that Professor Ollivier, of Paris, has reported three cases of apoplexy, which he called pulmonary unilateral apoplexy, in which he found at the autopsies that with a hemorrhage in the left corpus striatum, having caused a right hemiplegia, there was congestion and apoplexy of the right lung. If you examine with care all the patients who may come under your notice, I am confident that you will always detect some trouble in the lung or the pleura of the same side with the palsied arm, and sometimes of both sides. The production of those alterations does take place very rapidly after the onsent of the cerebral lesion, as it is an effect of it. While Dr. Brown-Séquard made his experiments on the subject, I being his assistant, then I could see the lesion in the lung take place under my very eyes, as the first lesion was being produced in the cerebrum.

The heart, in a less degree of frequency, is found to contain hemorrhagic spots after brain lesion. In animals the frequency is great enough, but not so in men. There is another morbid phenomenon produced by brain disease in human pathology; it is a state of the heart which so much resembles hypertrophy as to lead the inexperienced to commit an error in diagnosis. I believe that most of the patients who die of cerebral hemorrhage have that pseudo-hypertrophy of the heart, which, in its turn, is accompanied by dropsy. Such an opinion is strongly supported by the researches of Bouillaud, Niemeyer, and others, who teach that that symptom never depends upon pure hypertrophy, but upon a weakening of the circulatory functions. Hence, Bouillaud found by clinical accuracy what very recent researches in the physiology of the brain have proved.

On the kidneys the effects of brain lesions also manifest themselves in the shape of the hemorrhage, congestion, etc. Ollivier has also shown that in human pathology cerebral hemorrhage gives rise to albumen in the urine within a very short time after the onset of the attack—sometimes, however, a long time after, but always at some period before death. Now this point must be understood in practice, in order not to commit errors in prognosis and treatment. In some cases albumen appears and disappears. The first case that came under my notice was in this very city, where I was visiting Dr. B.-S. some four years ago. A patient of his had been taken with palsy from hemorrhage on the brain; besides symptoms in the lungs and heart, his urine, which was examined by a physician of this city, was found to contain, two days after the attack, a quantity of albumen. I had examined the urine on the very day of the attack, and it contained none then. It disappeared after the fourth day, and only reappeared some time before death, which followed in the train of large bed-sores.

Now, in regard to the correspondence of these lesions with particular parts of the brain, I have made quite a number of experiments within the last six years on these particular points and many others, and I think that I can safely say that any kind of lesion seated in any part of the brain, and even of the meninges, will produce in animals such symptoms, and the same is the case in the human subject, as I have found by analyzing an immense number of cases reported for other purposes.

But this is not all. Experimentation and clinical researches show that dis-

orders of the viscera, thoracic and abdominal, also in their turn give rise to symptoms of lesions of the brain. My learned friend, Dr. Lépine, of Paris, has published a very excellent paper some six years ago, in which he has shown, supported by cases, that pneumonia does give rise to hemiplegia. He has very carefully collected his cases from the wards of Prof. Charcot and others, and his researches tend to show the connection between pneumonia and hemiplegia to be such that there is no room for supposing that in these cases there was only coincidence. Brown-Séquard has shown that lesion of the first thoracic sympathetic ganglion in guinea-pigs brings on vascular troubles in the ear and eye on the same side, rotatory movements, etc. Lépine himself has shown that injections of irritative substances in the lung tissue do cause constriction of the pupil on the same side, secretion of tears, etc. I have found that instilling a drop of absolute alcohol by the hypodermic syringe in the lung-tissue of a guinea-pig will give rise to transient paralysis of the anterior leg on the same side. Lately, Prof. Leudet, a most accurate observer, has reported that he has seen hemiplegia occur in a patient every time that he washed the pleural sac, from which he had aspired a quantity of effused matter. Such examples are not infrequently found when looking up cases in records, journals, etc.

The irritations of the liver in rabbits cause trouble of the innervation, which I doubt not have their parallel in human pathology. Those of the stomach are already too much known to require notice; let me say, however, that I have quite frequently seen the phenomena which Brown-Séquard has been, with Schiff, the first to notice. I mean the influence in animals exercised by lesions of the brain on the stomach. Physicians are well aware that a great majority of cerebral troubles originate in gastric disturbances; but I believe—and some few cases that have occurred to me in practice prove—that inflammation, or disorders of the brain of any kind, or of the meninges, are the most prolific producers of gastric disturbances—lesions of the intestines. I know that those physicians who devote special attention to diseases of children have noticed that sometimes disorders of the alimentary canal are found associated, in such a way as to suggest the relation of cause to effect, with inflammation of the middle ear. J. Frank, the learned pathologist, has indeed put on record that in man grave diseases of the liver do give rise to inflammation of the right ear. Now, gentlemen, I feel that I ought to explain here. There are practitioners who believe that the ophthalmoscope is the infallible detective of lesions of the brain. Some think even that they can localize the seat of the disease. In bringing to your notice that fact of possible connection between the liver disorder and the middle right ear inflammation, I do not intend to be credited with urging the use of the auriscope in order to discover the possible connection between the simultaneous disorders of the organs, and still less to locate anything in the brain, if there be also brain symptoms.

Experiments have taught me, however, that a strong irritation of the liver, while the cerebrum is exposed, will produce anæmia of the convolutions, but yet I do not mean to infer that such state of the liver in men or animals is productive of drowsiness, although that symptom is frequently met with in quite a number of liver complaints. I make that statement "en passant" because I know the stress that, with reason, is laid upon results of vivisection, and I think it but right to say that the state of the circulation *producing* sleep is a matter unknown as yet.

The intestinal irritation can cause hemiplegia under certain circumstances, a fact of the utmost importance in determining the real significance of the symptom palsy. Dr. Nicaise, of Paris, a distinguished surgeon, has lately brought before the notice of the surgical society of that city two cases which occurred to him. They were women past the critical period. The first suffered from right crural strangulated hernia. She had, as a consequence, left hemiplegia, with palsy of face of the same side; the attack came on gradually, and there was no aphasia; herniotomy was performed without opening the sac, and the patient was cured. The second was also right crural strangulated hernia. Hemiplegia supervened slowly, and was complete, limbs and face same side; as in the other case the mind was unaltered, and there was no aphasia; this patient died of peritonitis after the operation of kelotomy. Those cases, I repeat, have

been reported by Dr. Nicaise especially to show that the palsy did not depend upon brain lesion by clot or otherwise. I think that it is unnecessary to enlarge on the value and significance of the series of paralytic symptoms induced by a morbid influence exerted by diseased viscera upon the brain. I will now try to offer an explanation for those phenomena, which, if acceptable, may probably suggest a mode of dealing with them efficaciously. I do not hesitate to say that those symptoms are all reflex in their nature, because there is no possibility of considering, for a minute, that irritation of the intestines, for example, will bring on paralysis in a direct manner. The reflex phenomena are brought about by the agency of vaso-motor nerves. At one time this system of nerves was the scapegoat in every disease; at the present time there is too little said about it. If a nervous system could be personified, this would be the one "qui ne meritait ni cet excés d'honneur ni cette indignité."

While discussing the pathology of reflex paralysis, which he thinks does not even exist, Prof. Vulpian states that, after all, lesions have always been found in such cases when the autopsies were carefully performed—I doubt not in the majority of cases. But nevertheless, the occurrence of the paralytic symptom contemporaneously with the visceral disease, I believe, goes far to show a relation of cause to effect, and very certainly we all know that if bloodvessel or nerve-fibre be kept in an abnormal state for a length of time, their nutrition is impaired, and the parts which they subserve are *à fortiori* impaired. It matters not whether the impairment is brought about by dilatation or contraction, both permanent, of vessels. In the point at issue the fact to be kept in mind is that whether it be cases of the first series, *i. e.*, symptoms in the viscera during the occurrence of brain lesions; or of the second series, symptoms of brain affections during the existence of visceral diseases, we have to deal with consequent, not a mere coincident element, and understand that it is always an irritative agent which is at work.

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A Case of Epidemic Cerebro-Spinal Meningitis without Symptoms.

Dr. Gaevano Paoulucci relates in *Il Morgagni* for May the case of a young man, aged twenty-one, who had previously suffered from cutaneous eruptions, ozæna, articular rheumatism, frequent epistaxis, and latterly from precordial pain with fever. He was admitted to hospital on the fifth day of his illness, having presented subjective symptoms of pneumonia of the left lung; and, on physical examination, lobar pneumonia of the base of that lung was found. The area of cardiac dulness was increased, more in the longitudinal direction; the sound over the bicuspid valves was very weak, that over the sigmoid valves was accentuated, and friction-sound was heard. The spleen and liver were enlarged. The pulse was frequent and small; the strength was much reduced; there was severe pain at the lower part of the chest on the left side, increased by pressure, by coughing, and by deep inspiration The temperature, which was high, fell on the tenth day, but suddenly rose again with equal intensity. The patient died on the tenth day after admission.

At the necropsy, pneumonia, pleurisy, and dilatation of the heart, were found. But, besides all this, there was the most classical form of epidemic cerebro-spinal meningitis; the pia mater of the whole brain, especially at the convexity, was strongly congested, thickened, and covered with a fibrino-purulent exudation of greenish-yellow colour, filling the subarachnoid space. These appearances, less in degree, were observed also in the internal aspect of the cerebral hemispheres, on the upper surface of the cerebellum, on the medulla oblongata, and the upper part of the spinal cord. They were found of slight intensity in the cervical portion of the cord, but became more distinct in the dorsal and lumbar regions, and were most intense in the cauda equina, where a large collection of fibrino-purulent fluid was found between the arachnoid and pia mater. There was some exudation along the choroid plexus in the lateral and third ventricles of the brain.

Here was a case of extensive meningitis without symptoms, with no obscuration of consciousness, no intense headache, no jactitation, no muscular contractions or paralysis, no painful sensation in the extremities, no cutaneous

hyperæsthesia or anæsthesia, no disturbance of the special senses. There had been vomiting—not spontaneous, however, but when the patient took turpentine.

In attempting to explain this case, two hypotheses may be put forth; either there was congenital atrophy of the brain, allowing the exudation to take the place of the serum without producing symptoms, or the cerebro-spinal meningitis had already run its course when the patient was admitted, the exudation alone remaining.—*London Med. Record*, Nov. 15, 1876.

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Temperature in Tetanus.

Dr. THOMAS, in his Thèse de Paris, 1876, relies on the researches made some time since, and as the conclusion of an excellent monograph, formulates his "considerations on temperature in tetanus," which he supports by fourteen cases which have come under his observation. He has thence been able to remark that there is always elevation of temperature either at the beginning or the end. Hence he formulates the conclusion that elevation of temperature in tetanus is constant. But according to the analysis of the cases it has been impossible to assign a cause for the elevation in temperature in cases of spontaneous tetanus. This elevation of temperature in traumatic cases may be due to an intercurrent disease or to a traumatic complication. In the great majority of cases followed by death, the notable elevation of the temperature during the last moments in tetanic patients is due to the development of an important pulmonary lesion. It is indeed impossible in the present state of science to recognize any one cause for the elevation of temperature in tetanic patients.—*Lond. Med. Record*, Nov. 15, 1876.

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Postpharyngeal Abscess in Children.

A large portion of the last number of the *Jahrbuch für Kinderheilkunde* (Band x. Heft 1 and 2) is occupied by this valuable paper. Dr. BÓKAI, who is directing physician to the Children's Hospital at Pesth, has already contributed to the literature of the subject, he having published, in the first volume of the *Jahrbuch*, twelve cases of the affection. His present communication is based upon the observation of 144 cases, in which, for statistical purposes, the first twelve are included. Of the whole number, 129 were idiopathic; three were due to the burrowing of cervical abscesses; four were secondary to vertebral disease; seven occurred in the course of scarlatina, and one was the result of an impacted foreign body—a brooch. Besides these, there were forty-three cases of lymphadenitis retropharyngealis, which terminated in resolution. The idiopathic cases were all believed to have originated in lymphadenitis. A large majority of the abscesses were situated laterally; only one-sixth occupied the middle line.

In the etiology, sex appeared to have no influence except that three out of the four patients, in whom it was secondary to vertebral disease, were boys. By far the larger number (134) occurred under four years of age; thus eighty-six in the first year; thirty-four in the second year, and fourteen in the third year. The youngest patient was eight weeks old. Thirty-two were distinctly scrofulous; ten rachitic. The preponderance of the affection in early childhood is ascribed to the much greater frequency of local affections of the mouth and throat at this period, more especially perhaps in connection with dentition. Scarlatina was not a very potent factor in its production, since only seven out of a total of 664 scarlatina patients were affected by it.

The first symptom of postpharyngeal abscess is difficulty of swallowing (in infants, inability to suck) which may lead to regurgitation, and may be associated with vomiting, of the food. Next, the voice becomes muffled or nasal, or when the abscess is fully developed, of a gurgling character; during sleep the patient snores loudly. The interference with respiration is greatest when the swelling is near the glottis, and, in these cases especially, the child is very restless, and frequently wakes in a choking fit. The position and the extent

of the abscess have the most influence upon the respiration; but the small size of the throat in young children, and the possibility of œdema glottidis, must also be taken into consideration. The increased secretion is a further hindrance. Cough is not constant; and, when present, is usually a late symptom. The neck is stiff, and, in the advanced stage, a prominence may be seen near the angle of the jaw; in the earlier stages, this must be felt for. On examining the throat, the isthmus faucium appears narrowed and is covered by an accumulation of viscid mucus. The pharynx and adjacent parts are very red, and a swelling of the same colour, and of the size of a bean or larger, is seen on the posterior wall, usually behind one of the tonsils; the soft palate and uvula are thrust forward. The negative results of inspection are not sufficient to exclude abscess. Digital exploration is the only means of determining with absolute certainty its existence; and this method gives one in addition an idea of its development and of the distance it extends downwards. It must, therefore, never be omitted. Fluctuation may be felt if the lump in the neck be pressed while the finger is on the abscess. Fever, in the beginning, is but slight in acute cases, and is often absent in the chronic and subacute; when the abscess is fully formed it is present, but the temperature is rarely over 103° F., and the pulse is not markedly quickened unless cyanosis sets in.

Of the 144 patients, 120 were cured, 11 died, and 13 were lost sight of. An analysis of the fatal cases gives the following results—five out of the 129 idiopathic cases, three out of the four with vertebral disease, two of the seven scarlatina patients, and the one traumatic case. The three, in whom it was secondary to cervical abscesses, all recovered. In general, it may be affirmed that the termination will be probably fatal unless surgical aid be given. Spontaneous bursting of the abscess must not be waited for, though it occurred in 19 cases. Of the 11 above cited as fatal, seven were opened with the bistoury, two opened spontaneously; and, in two, the abscesses remained unopened. The prognosis is unfavourable when the child is very young or weak, when the course of the disease is very acute, and when the abscess extends very low down. Of the complications, the most important is pneumonia. This occurred in 10 cases; in three before the opening of the abscess, in seven after this; it was engendered apparently in the latter, by the admission of pus into the air-passages. Facial paralysis occurred in three cases, perforation of the external meatus in one.

The treatment of lymphadenitis consists in the application of cold compresses, which, if the case be acute, must be very frequently changed. At the same time, cold is to be applied internally; small pieces of ice may be swallowed, or, in those too young to understand this, iced water may be syringed against the pharynx. As soon as pus forms, poultices or warm compresses must be substituted, and when the abscess is fully developed, it must be opened. In five advanced cases, the pressure of the finger was sufficient for this, and they all ended in recovery; though, in one, the abscess refilled and had to be opened with the knife. The instrument usually employed was an ordinary sharp-pointed light bistoury, guarded or not with strapping; when the abscess was very low down, a curved trocar was used. In some cases, the operation saved the patient from imminent death. The after-treatment consists in syringing out the throat with lukewarm water, and in maintaining the incision patent for some days; the occasional pressure of the finger is generally enough for this. Severe bleeding may follow the operation, especially when this is attempted too early; but, unless an artery be wounded (and the proximity of the internal carotid must not be forgotten), cold injections should suffice to arrest this. Another danger is the entry of pus into the air-passages; this produced asphyxia in two cases, and would have been fatal but for timely faradization of the phrenic nerve. The influence of this accident upon the development of pneumonia has already been referred to. Abscesses in connection with vertebral caries should not be opened unless they offer a serious impediment to respiration or deglutition. In no case was it deemed advisable to open a postpharyngeal abscess from the outside, though it is allowed that such a course may be sometimes necessary. The article closes with the notes of ten cases.

[One cannot but feel some surprise at the large number of cases; but it must be remembered that they were spread over twenty-two years. The total number of patients treated in the hospital during the same period was 109,189. The great length of the paper renders it impossible to do complete justice to it in these columns, so that those specially interested in the subject may be referred to the original.—*Rep.*]—*London Med. Record*, Nov. 15, 1876.

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Case of Postpharyngeal Abscess.

In the *Medicinisch-Chirurgisches Centralblatt*, No. 35, Dr. LÖWENSTAMM describes a case in a boy aged three years, previously quite healthy. For a week before he was seen, he had been feverish and had had difficulty in swallowing and in breathing. Rude attempts had been made to raise what was looked upon as a displaced tonsil. The child was pale, the mouth wide open, the head retracted, and the breathing difficult and snoring. A deeply seated swelling was seen behind the left angle of the jaw. On examining the throat, the posterior wall of the pharynx showed a prominence which, towards the left side, had a yellowish colour; fluctuation was distinct at this part. The cervical glands and the vertebræ appeared quite healthy. The parents, at first, refused consent to an operation, and it was not until the child was in imminent danger of suffocation that this was undertaken. An incision was made and the flow of pus accelerated by pressure upon the swelling in the neck; afterwards the throat was syringed with lukewarm water. Recovery was complete. —*London Med. Record*, Nov. 15, 1876.

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The Antizymotic Treatment of Diphtheria.

Dr. PAVESI describes, in the *Annali di Chimica Applic. alla Medicina*, 1876 (abstract in *Annali Universali di Medicina*, August), a formula which he recommends in the treatment of diphtheria. It is founded on the antizymotic properties of chloral, salicylic acid, and the sulphites. It is as follows: ℞ Chloral hydrate, salicylic acid, glycerine, sulphite of soda, each 1½ parts; distilled water, 3½ parts; spirits of wine, 1 part. The whole is put into a strong glass vessel, which is closed, and exposed to a heat of 100° to 120° Fahr. for a few minutes, until the sulphite, salicylic acid, and chloral are completely devolved. A homogeneous solution is produced, which is filtered through bibulous paper, and preserved in a well-closed vessel. It is an oily, limpid, colourless liquid, having the odour of its constituent parts. It is insoluble with water. On the application of proper tests, the chloral, salicylic acid, sulphite of soda, and glycerine are found to be unchanged.

Used both internally and externally, it is an energetic antiseptic, antifermentative, disinfectant, hæmostatic, and preservative, as well as a destroyer of parasitic organisms. Dr. Pavasi says that it may be used as an antiseptic, and also as a sedative, in a large number of diseases.—*London Med. Record*, Nov. 15, 1876.

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Tracheotomy in Diphtheria and Croup.

Whatever may be the outcome of the investigation instituted by the Royal Medical and Chirurgical Society as to the identity or non-identity of membranous croup and diphtheria, there will remain the fact that each of these diseases, or each of the varieties of the same disease, as the case may be decided, tends to kill rapidly by suffocation; and that this suffocation is due to two causes—first, to the mechanical obstruction offered by the diseased state of the mucous membrane; and secondly, to the laryngeal spasm excited by this diseased membrane.

In this respect, at least, the membranous croup of Home and Cheyne is identical with the tracheal *diphthérite* of Bretonneau, albeit the former is sporadic, and the latter epidemic—a point of difference upon which much stress has been laid. While, however, it is certain that membranous croup in the great majority of

cases is a sthenic disease, which kills by suffocation, and not by the vital depression it produces, diphtheria, though it often resembles croup in its sthenic character, is, it must be confessed, frequently asthenic, and kills by its own intensity and virulence. In such cases, tracheotomy is out of the question, for no one would think of performing the operation when danger to life lies in a general infection of the system, and not in the local lesion of the air-passages. Excluding, therefore, from our consideration those cases of croup and diphtheria in which death is threatened by exhaustion, it ought, we think, to be regarded as a rule that the physician should advise, and the surgeon encourage, the performance of tracheotomy in these diseases when it is seen that medical treatment alone is clearly failing.

There are some—perhaps not a few—who would object to this on the grounds—first, that apparently hopeless cases do sometimes recover; and, secondly, that death is sure to follow tracheotomy, either from an extension of the disease itself, or as the result of the operation which has dangers of its own. Indeed, it is well known that some surgeons affirm the operation to be unjustifiable; while others, without going so far as this, deny the validity of any favourable arguments drawn from statistics, because, as they aver, the operation in the successful cases was performed so early that it cannot be said that recovery would not have occurred without it; or they dispute the nature of the disease, and declare that the successful cases were not membranous croup at all, but laryngitic or laryngo-tracheitis.

With regard to the first objection, it is pretty certain that whatever may be the case on the Continent, and especially in France, where the operation is performed at a much earlier stage in the disease than elsewhere, English practice is entirely against it; for, as the result of our own inquiries, it is clear that the operation is not often, if ever, had recourse to in this country until all hope of recovery without it has been abandoned.

The time at which the operation ought to be performed is when the voice is extinct, and the difficulty of respiration continues and increases when the skin is becoming livid, the extremities are cold, and the anterior thoracic wall, especially the lower end of the sternum, sinks in on inspiration. It has been asserted by some of the advocates of tracheotomy that, in the absence of stridor, and when the chest-wall remains puffed out and the lungs seem full and distended, the operation is undesirable, as these signs, they say, indicate the extension of false membrane along the small bronchial tubes.

It may be questioned, however, whether these symptoms ought to contraindicate interference, for they may arise from an œdema or congestion of the lungs, the result of long-continued obstruction to respiration—a condition which, doubtless, impairs the chances of the operation, but does not render it useless, although it does suggest that the operation ought to have been earlier entertained. But the existence of congestion is no real contraindication; for its relief is facilitated by the increased freedom of breathing after tracheotomy.

Nor can the second objection be any longer supported, for many of the successful cases have occurred where undoubtedly there was false membrane present; and there are now numerous proofs that the false membrane can sometimes be removed by the surgeon, and sometimes expelled by the patient after tracheotomy has been performed. Indeed, it seems obvious, granting the presence of the membrane, that the best chance of getting it expelled is to open the windpipe—for is not this the recognized practice with other foreign bodies in the air-passages?

Some months ago we instituted an inquiry, by which we acquired sufficient information to show that there is a fair proportion of recoveries after the operation, whether we look to metropolitan or provincial, English or Scotch practice. We collected altogether from hospital and private practice eighty-nine cases of unmistakable croup and diphtheria, in all of which tracheotomy was performed, and out of these thirty-six recovered, and fifty-three died: which means that two patients out of every five operated upon recovered—a success by no means insignificant when it is remembered that the operation does not

cure the disease for which it is done, but only affords a chance of life by postponing or averting death.

In several of these successful cases the true nature of the disease was shown by the escape or removal of false membrane. Last year we published (*Medical Times and Gazette*, July 17) a successful case by Dr. W. Richardson, of great value and importance, in which this occurred; quite recently another case illustrating the same fact was brought before the Medical Society of London; and in another column will be found the detailed reports of two similar cases, which have been recently under treatment in the Middlesex Hospital, in each of which tracheotomy was followed by the expulsion of false membrane and recovery.—*Med. Times and Gaz.*, Nov. 25, 1876.

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Acute Thyroiditis.

The following case is reported by BEYER in *La France Médicale*, No. 66, 1876. On August 4, 1876, a man, aged forty-six years, was admitted into the Hôpital de la Pitié under the care of Professor Verneuil, with plegmonous swelling of the whole of the subhyoid region, accompanied by severe constitutional reaction. The affection commenced on the morning of August 1, when the patient, immediately after an attack of hæmoptysis, felt deep-seated pain in front of the neck, which pain was increased by movements of deglutition, and associated with marked dysphagia. The swelling increased rapidly in the course of the day, and became very tender. In the evening, respiration was much impeded, and there was intense fever, accompanied by congestion of the face and violent pulsation of the temporal arteries. These symptoms increased in severity during the three following days. At the time of the patient's admission, the congested face was bent forwards through the action of the sterno-mastoid muscles. There was enormous swelling of the whole pretracheal region; the tense skin presented an erysipelatous redness, and the affected region was very tender. On digital examination, a hard deep-seated tumour could be felt, over which the inflamed and œdematous integument could be moved. This tumour seemed to pass under the sterno-mastoid muscles and downwards behind the sternum. The neck could not be moved by the patient, and communicated movements were much restricted and caused intense pain. The respiration was interfered with, and deglutition rendered very difficult. In establishing a diagnosis in this case, glandular inflammation was at once excluded, as such an origin was contraindicated by the extent of the affection, by its commencement in the median portion of the neck, by its diffusion, by the absence of any starting-point of adenitis, and by the acute course of the inflammation. There remained, however, much doubt as to whether the case were one of extensive phlegmon or of acute thyroiditis. In order to remove this doubt, attention was directed in the first place to the physical sign mentioned by most surgical authors, and especially by M. Bauchet, viz., associated elevation of the tumour and the larynx and trachea during movements of deglutition. In this case, it was made out that neither the larynx nor the tumour moved during deglutition. This immobility of the larynx in cases of acute thyroiditis had, however, been previously observed by M. Gosselin, who attributed the absence of a sign generally considered as pathognomonic of affections of the thyroid gland, to prevention of movements of deglutition and of elevation of the larynx through inflammatory swelling and induration, and through muscular spasm excited by pain from such attempts. It became necessary, therefore, to investigate other signs before making a precise diagnosis. Extensive phlegmon was indicated by the diffused swelling, the deep-seated, hard, and irregularly circumscribed œdema, the erysipelatous blush, and the extension of the swelling to neighbouring parts. In favour of the diagnosis of thyroiditis, there were three rational symptoms: the preceding attack of hæmoptysis, which from the absence of any pulmonary lesion had been evidently caused by congestion of the larynx and trachea; next, the impeded respiration; and, thirdly, the extreme dysphagia. In seeking for other reasons in favour of one or the other hypothesis, Professor Verneuil did not overlook the facts that thyroiditis is an

exceptionally rare affection in the male, and that it hardly ever occurs save in the subjects of hypertrophy or cystic disease of the thyroid body, or in the inhabitants of a region where goitre is common. The patient had resided in a department where hypertrophy of the thyroid gland is frequently met with, and he stated that his neck had always been large. The case was finally diagnosed as one of thyroiditis, and the correctness of this view was confirmed by the subsequent course of the affection. After the application of a few leeches the swelling speedily subsided, the pain ceased, and the movements of deglutition and respiration became free. On August 12, the patient was discharged from the hospital as cured, but then presented a well-marked goitre. The following conclusions were drawn from the facts connected with this case. 1st. Thyroiditis may assume the external characters of a large subaponeurotic phlegmon of the neck. 2d. The diagnostic signs based on the circumscribed condition of the tumour, on its form and seat, and on its elevation during movements of deglutition, are not always present, or at least cannot in all cases be made out. 3d. The diagnosis should be based mainly on the difficulty in deglutition, on respiratory disturbances, and on altered phonation; it is necessary also to inquire as to the recent occurrence of an attack of hæmoptysis 4th. The pre-existence of thyroidean hypertrophy, and the previous residence of the patient in a goitre-district, constitute strong presumptions in favour of thyroiditis. 5th. Local bleedings, practised early and freely, are probably of some efficacy in cases of this kind.—*London Med. Record*, Nov. 15, 1876.

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Beech-Tar Creasote in the Treatment of the Expectoration of Phthisis.

Dr. Georges Daremberg has first made a chemical analysis of the sputa of phthisical patients with great care; he has shown that these sputa may contain almost as large a quantity of phosphates and chlorides as the urine, and that expectoration in these cases is one of the ways by which the products of denutrition are expelled; this expectoration, however, is not only one of the ways, but also one of the causes of this denutrition, which is indicated by precise prognostic and therapeutic data. Beech-tar creasote has been employed in France by M. Bouchard, and in five cases of advanced phthisis the results have been favourable; the expectoration has quickly stopped. From 20 to 40 centigrammes (about 3 to 6 grains) of creasote per diem were given. According to Hlasewetz and Barth this beech-tar creasote is a combination of creasote ($C_8H_{10}O_2$) with a carburetted hydrogen.—*Lond. Med. Record*, Nov. 15, 1876.

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Treatment of Diarrhœa in Hot Countries by the Sugar of Milk.

Dr. Talny prescribes for the diarrhœa of hot countries from 20 to 300 grammes of sugar of milk daily. He administers it in the simplest way: the sugar dissolved in a little water or as a syrup may be partly taken at each meal, or as a draught in the course of the day. An excellent mode of administration consists in putting the dose of sugar of milk to be taken into half a litre or two litres of milk, according to the habits and the digestive capacities of the patient. The treatment is spread over several months, diminishing the dose as nutrition becomes more considerable and easier. According to M. Talmy's little work (published by Coccoz, Paris) the endemic diarrhœa of hot climates is the result of a functional lesion of the liver, which results in the diminution and even the suppression of the glycogenic function of the liver. The sugar of milk may thus replace the glucose which is wanting in the blood.—*Lond. Med. Record*, Nov. 15, 1876.

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The Blood in Acute Yellow Atrophy of the Liver.

Matterstock (*Wiener Med. Wochensehrift*, 1876, pp. 882 and 910) has made observations upon the blood of two cases of acute yellow atrophy of the liver which were under the care of Professor Gerhardt in the Julius Hospital at Würzburg.

The blood was obtained in the usual way by pricking the finger; a drop was immediately put upon a glass slide, and forthwith examined with the microscope. In the first case, a great increase in number of the white corpuscles was seen, approaching 1 to 12. In the second, the white corpuscles were also somewhat increased, but the chief changes were seen in the red corpuscles. Not one could be found with the natural aspect. Two shapes prevailed: one, the mulberry; the other the stellate. [It will be thus seen that one shape is only an exaggerated state of the other, the processes from the corpuscles being in one case rounded, in the other pointed.—*Rep.*] Four to eighteen of these processes were seen at the border of a corpuscle; no movement or cleavage of the corpuscles could be made out.

The corpuscles themselves were dotted with points, according to the number of the processes. The corpuscles which showed no processes looked swollen and pale, as if acted on by water.

By the side of these changes appeared those which always take place when blood is drawn from the vessels, and which are commonly set down to dilution with water or cooling of the blood (Rollett). These corpuscles appeared smaller than the rest, contracted and with processes much less marked than in comparison with the others. These either fell together in groups or showed singly in the field in the midst of the large corpuscles.

In the first case the same appearances were seen, but the corpuscles were not altered in such large numbers. Some had curved themselves into the shape of a saddle. The cupping of the disk could well be made out.

Matterstock thinks these changes not due simply to the removal of the blood from the vessels; but at the same time does not insist that these altered shapes circulate in the blood. He next inquires by what agents these changes are caused. It is not due to the high temperature of the blood, as that never rose above 38.5° C. or 101.3° Fahr. Neither is it due to the bile-acids; as they have quite a different action on the corpuscles, suddenly and completely destroying them. In uræmia the blood-corpuscles are quite natural in shape. In conclusion, Matterstock remarks that there are many points in common between the appearances seen in these corpuscles and in the monad-containing corpuscles described by Hüter. They differ, however, as the corpuscles from the jaundiced patients showed no to and fro movement.—*London Med. Record*, Nov. 15, 1876.

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Multiple Abscesses of the Cellular Tissues in Infants.

M. Bouchut (*Gazette des Hôpitaux*, August 1, 1876), after remarking upon the rarity of this affection, points out that the abscesses may be produced under the influence of three diatheses; the scrofulous, the syphilitic, and "the puerperal." In the puerperal form, nodules develop under the skin, which then reddens and becomes thinner and painful. The nodules, at first hard, rapidly soften, and fluctuate, and, finally, unless previously incised, burst. Suppuration takes place much more quickly in this than in the other two forms. In the syphilitic variety, the child has usually already been cured of the commoner manifestation of syphilis, small, hard, slightly movable, nodules (gummata) then appear in the subcutaneous tissue. They pass through the same stages as those of the preceding form, but do not burst for perhaps two or three months. After the discharge of the pus, which is small in quantity, and of a yellowish sanious character, the opening remains livid and fistulous for some time prior to closing. If the abscess be situated over a bone, the periosteum is destroyed and the bone exfoliates. The scrofulous form generally occurs between the eighth and fifteenth year. It is very rarely seen in the first year of life. It begins with very small subcutaneous nodules scattered over the trunk and limbs, and less commonly over the face. After having remained stationary for some time, they increase in volume, soften, fluctuate, and break, with a discharge of thick, greenish pus. A fistula results, and this, with its reddish livid orifice, remains open for several months and leaves a depressed scar, which for a long time is coloured. The treatment of the puerperal form consists in the removal of the child from the mother, the application of linseed poultices, and, as soon as fluc-

tuation is felt, the incision of the lumps. The syphilitic and scrofulous forms should be treated respectively with iodide of potassium and cod-liver oil, etc.; and, while the nodules are hard, iodide of lead ointment should be applied. Four cases are appended.—*London Med. Record*, Nov. 15, 1876.

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A Contribution to the Therapeutics of Acne Rosacea.

Prof. NEUMANN, of Vienna, after calling attention (*Allgemeine Wiener Med. Zeit.*, No. 37, 1876) to the fact that it is the vascularity of the tissues which prevents the permanent cure of the disease, recommends the following method for the cure of this condition. The enlarged or new-formed vessels are slit open by a cataract needle; slight scarifications and punctures of the diffused red districts are also made, the existing nodules are removed by the scoop, and the hemorrhage checked by lint. The parts which are red without visible capillaries are then painted with a solution of carbolic acid in alcohol, one to three or four parts. The pain produced is slight and soon disappears, leaving a thin coating which peels off in a few days, or is removed by the next painting, which must be repeated every second day. The results by this method in the flat forms of the disease, Professor Neumann claims, are always successful.—*Boston Med. and Surg. Journ.*, Dec. 7, 1876.

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Treatment of Lupus.

VEIEL gives (*Vierteljahresschrift für Dermat. und Syph.*, III Jahrg. 2 Heft), in the yearly report of his skin hospital at Cannstatt, an account of the various methods employed there in the treatment of this affection. Cod-liver oil was given, especially to patients of a scrofulous habit. The main reliance, however was placed upon the local destruction of the lupus efflorescences, for which scarification with subsequent cauterization by chloride of zinc is still recommended by Veiel as the best means, particularly on account of the fine scars which result. Scooping or pricking without subsequent scarification was always followed by relapse in a short time. As a most valuable remedy, on account of the slight painfulness and exactness of its application, and the fairness of the resulting scars, he recommends chloracetic acid. For small, superficial lupus patches a single painting with it suffices. The crust separates generally without suppuration, and leaves a small, shallow scar. Larger and deeper places are best treated by boring the acid into them with a glass rod, and treating the wound after the crust falls by mild cauterization with chloride of zinc. In this way he succeeded in perfectly healing a lupus superficialis which covered a large part of the upper arm. The acid is of great service also in destroying the projecting cicatricial cords, which sometimes follow the cure of lupus, employing between the cauterizations the emplastrum cinereum.

In lupus erythematosus good results were obtained in some cases by the repeated use of an ointment of biniodide of mercury, one part to five. Scarification with subsequent cauterization with chloride of zinc also produced a cure.—*Boston Med. and Surg. Journ.*, Dec. 7, 1876.

Surgery.

Exostoses in the External Meatus.

ALDINGER narrates (*Archiv für Ohrenheilkunde*, vol. xi., No. 2) a case of exostoses in both meatuses which gradually filled the passages and produced such inflammation as to require operation. Successful operations in such cases have been so rare that these are of special interest.

The patient, a healthy man thirty-six years old, was first seen with inspissated cerumen in one ear, which had caused deafness. On removal of the small mass it was found that the meatus was largely filled by an exostosis from the upper and posterior wall, which had formed without the patient's knowledge and without any previous disease of the ear. The removal of the cerumen restored the hearing to the normal standard. Examination of the opposite ear showed a similar exostosis.

Eight years after, it was found that the growth in the first ear had closed the passage to a mere slit, which frequently became obstructed from collections of cerumen, and in the course of a few months this slit closed up, shutting in a mass of cerumen between the exostosis and the drum-membrane. The hearing for the voice was completely lost, and the watch was only heard on pressing it against the ear. After this condition had continued for six months suppurative inflammation of the tympanum and meatus set in, and Professor Heinecke removed the growth by chiselling it off in small pieces, while the patient was under chloroform, till a tolerably large passage had been made to the drum-membrane. The reaction from the operation was slight; suppuration set in on the third day, and on the fifth day quite a large splinter of bone came away, and again on the tenth day a still larger piece was removed by the forceps, leaving the meatus about one half its normal size. Examination now showed the drum-membrane in a granular condition, with a small perforation anteriorly. By local treatment this condition was relieved, and the perforation healed, giving a hearing of over three feet for the watch. The seat of the operation cicatrized, but for some months the cicatrix seemed to be again enlarging; eventually, however, the swelling diminished and the patient was left with a fair-sized meatus and perfect hearing.

Six months after the first ear healed the patient had a precisely similar attack of tympanic inflammation in the other ear, which was found to be similarly closed by the growth of the exostosis, and after this inflammation had continued for two months same operation was performed on that side. The result of the operation was equally favourable on this side, a fair meatus being formed, but the tympanum from the long-continued inflammation was more seriously diseased and a large polypus had formed in it, which required removal. Two months after the operation the tympanic inflammation had subsided, and the perforation of the membrane had healed, giving a hearing of thirty inches for the watch and an equally good hearing for the voice.

In regard to the method of operating, it is only said that narrow chisels were used, that they were applied directly to the base of the exostoses without previous incision of the skin, and that quite strong blows with the hammer were necessary. It was found to be impossible to see, and the operation was done chiefly by feeling.

Gout and syphilis, which have been considered by some authors to be the causes of these exostoses, were absent in this case.—*Boston Med. and Surg. Journ.*, Nov. 23, 1876.

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Nitrite of Amyl for Noises in the Ear.

Dr. MICHAEL, of Hamburg, communicated to the Section of Otiatrie (*Allgem. Wien. Med. Zeit.*, September 26), at the late Congress of Naturalists and Physicians in that city, a paper detailing the results of the trials of nitrite of amyl which he had made for the relief of noises in the ear. These constitute, he observes, one of the most distressing symptoms in many affections of the middle and inner ear, so that patients would rather resign themselves to complete deafness than to their endurance. Indeed, some have been driven by them to madness or suicide. Independently of their prognostical importance they are therefore, in a therapeutical point of view, of the greatest interest. In many cases, acute catarrh, tumidity of the tube, exudation within the tympanum or great depression of its membrane, etc., may act as causes, and on the removal of these relief follows; but in a great many other cases, especially in the indurated forms of inflammation of the middle ear and affections of the labyrinth, relief is not obtainable, or is but temporary. Every kind of narcotic,

derivatives, and galvanism have been recommended in these conditions; but, although some remarkable results have been obtained from these, they were quite exceptional. It therefore requires no excuse for proposing a new remedy for so distressing and obstinate an affection, especially when this has already met with some success.

Dr. Michael was induced to resort to the nitrite of amyl in consequence of its well-known paralyzing influence on the sympathetic, and especially on the nerves of the bloodvessels, and the fact that many forms of noises in the ear are not dependent upon mechanical causes, but upon the impression made by nervous irritation due to hyperæmia or anæmia of the brain or internal ear. Only in this way can we explain their occurrence in plethoric and anæmic conditions, and under the influence of certain medicinal substances, as quinia, salicylic acid, etc. Dr. Michael has treated twenty-seven such cases at the Vienna Polyclinic, to which he adds eight others derived from private practice. The following are the results: In nineteen considerable amelioration was produced, in eleven no effect was produced, and in three the noises completely disappeared from one ear and were diminished in the other. Three other cases are reserved for further observation. By far the greater number of cases were examples of *otitis media hypertrophica;* and among the improved cases were two, and among the unimproved one, of affection of the labyrinth. Of the remedy from one to ten drops were inhaled—the often-tried application *per tubam* having proved in nowise preferable. The inhalation was continued until the production of the earliest intoxication-appearances, as shown by great redness of the face, brilliancy of the eyes, and distension of the bloodvessels; and on the occurrence of giddiness was immediately discontinued. In all the cases that were improved the noises during this period became considerably increased, diminishing as the redness decreased, and then becoming much less than before. The duration of improvement after a single inhalation varied greatly, amounting in some only to several hours, in others to several weeks, and in most of the cases to from two to ten days. The effect of the second inhalation usually was of longer duration, providing it did not follow the first at a shorter interval than two days. Several of the cases have been published in detail in Knapp and Moos' *Archives;* and it need only be mentioned here that in some cases in which the inhalations proved fruitless the noises completely disappeared on the commencement of the redness of the face, to reappear in all their former vigour when this had ceased. The subjects of these were always anæmic young females. Some patients declared that, although the noises really were no feebler, yet they found that they could more easily bear them, and on this ground requested a repetition of the inhalation. The duration of the affection seemed to exert no influence whatever, for in several cases in which improvement occurred the noises that lasted from ten to twenty years yielded in just as short a time as in others in which they had only recently appeared. In four cases, besides the diminution of the noises, a considerable increase in the power of hearing also took place.

Nothing tends to impede the extension of a proposed mode of treatment more than its indiscriminate recommendation; and it is desirable, therefore, again to observe that this one is not beneficial in all cases, producing only improvement in most, and recovery in very few, while the effect is not durable in all. At present it is not possible to indicate with precision the cases for which it is most suitable. Acute catarrhs and affections dependent upon obvious mechanical causes do not call for its employment, as for these we have various means of treatment; and although there is not much use in offering a theoretical explanation of an empirical remedy, yet the cases in which affections of the labyrinth have undergone manifest improvement seem to show that the amyl directly influences the auditory nerve itself, or the vascular ramifications of the labyrinth.—*Med. Times and Gazette*, Nov. 25, 1876.

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On the Use of the Flexible Tracheotomy Tubes.

Mr. W. Morrant Baker read a paper on this subject at a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, Dec. 2, 1876). The evils

which so frequently result from the use of silver or other rigid tracheotomy tubes are well known. Pain and difficulty in their introduction and withdrawal, and more or less bleeding, are common; while ulceration of the trachea from pressure is frequently found after death, and in many instances has been the cause of the fatal result. Cases in illustration of these facts are quoted from various authors, and the endeavours which have been made to remedy the evil by altering the construction of the tube are referred to. The author then describes a tracheotomy tube which was made at his suggestion by Mr. Millikin, under the superintendence of Mr. Paley, house-surgeon to the Evelina Hospital for Sick Children, and which he believes will be found to possess all the advantages of a silver tube, without its disadvantages. It is constructed of vulcanized red India-rubber, and in shape and size resembles the ordinary tubes. Only one tube is used at a time, as it has been found quite easy of introduction and withdrawal; more so, indeed, than the innermost of the tubes on the usual double-tube arrangement. Hitherto the elastic tubes have been employed at periods varying from one or two days to as many weeks after the operation; and they have been used continuously, in different cases, for periods varying from a week to six months. They should not, as a rule, be introduced until about three days after the operation. In no case has there been any sign of obstruction on account of the tube yielding to the pressure of the edges of the wound in the trachea. It is necessary, however, to have always at hand, for an emergency, a simple trachea dilator or silver tube, especially during convalescence, inasmuch as, when the tube has been left out for a few hours, there may be temporary difficulty in replacing it, on account of contraction of the wound. The elastic tubes have been found very durable, and while in use become less clogged with mucus than silver ones. They can be also cleaned as easily as the silver ones, or more so. Cases are quoted in which the flexible tubes have been employed at the Evelina Hospital, Saint Bartholomew's Hospital, the Children's Hospital (Great Ormond Street), and St. Thomas's Hospital.

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On a Case of Lodgment of a Tracheotomy Tube in the Right Bronchus, and its Extraction.

Mr. Hulke further contributed at the same meeting (*Ibid.*), a report of this case. The tube used was not an old one, which by chemical action or friction, had broken from its shield, but a nearly new one, not previously used. The patient, H. D——, aged thirty-seven, was a tall, thin woman, admitted on July 29 last into Northumberland ward, Middlesex Hospital, with laryngitis. Her symptoms were so urgent that, with Dr. Greenhow's concurrence (in whose charge the patient was), immediate tracheotomy was performed. She at once breathed freely, passed a quiet night, and for a week her relief, interrupted occasionally by cough, seemed nearly complete. On August 10, whilst the inner tube was being replaced after cleaning, the outer tube slipped through the collar and shield, and she felt it slide from the wound deeply into her chest. Several attempts were made to seize the tube with slender long forceps, and other measures were adopted, but unsuccessfully. Direct interference was for a time deferred; Trousseau's largest tube was inserted, which was more comfortable, she said, than Durham's, and she breathed tranquilly, but felt pain at the right of the lower part of the sternum. Her cough grew more troublesome during the next few days, with pain on the left side; and by the 13th of August, her temperature being 103° F., and her pulse 120, the tube was evidently provoking inflammation Its immediate removal seemed the only prospect of rescuing her. Chloroform was given, Trousseau's tube withdrawn, and a long piece of German silver wire (one end of which was bent into a blunt hook about one-eighth of an inch long, and the wire again bent at about an inch and a half above this at an angle, roughly estimated as that which the right bronchus and trachea include), was passed through the wound down the trachea. The other end of the wire was bent in a large loop, the plane of which coincided with that of the tracheal end of the wire beyond the angle, and thus allowed it to be guided into the right bronchus. The tube was dis-

tinctly felt, and on the hook being slid onwards to the known length of the tube, it was slowly withdrawn, and from the resistance it was found that the tube was hooked, and was moving upwards. When near the tracheal wound the hook became disengaged, but the tube was here easily seized with a forceps and taken out, and Trousseau's tube re-inserted. The patient's temperature soon fell to 99°, and her pulse to 96, and on the 14th she felt, she said, very well, her cough was less troublesome, she breathed with ease, and had lost all pain and tightness in the chest. All threatening symptoms gradually disappeared, and on the 15th September she was discharged convalescent. She continued to use the tube till October 26, when she returned to the hospital for a couple of days, the tube was taken out, and in forty-eight hours the wound had contracted so as scarcely to admit a small probe. She has continued free from tracheal embarrassment. Some critical remarks followed as to the cause of the screw in Durham's tube becoming loosened, and on the defect of the outer tube in having no flange to prevent it slipping through the collar and being drawn into the trachea. Other defects of Durham's tube noticed were the jointed composite structure of its inner cylinder, necessitating a great thickness of metal, and reducing thus its efficient lumen and allowing it to be more easily clogged by the mucus lodging on the ridges of the joints. Reference was then made to the necessity of forceps for extracting foreign bodies from the air-passages being light enough to serve as a sound, and flexible enough to be bent in any desired curve. Such forceps are figured by Gross in his *Treatise on Foreign Bodies in the Air-passages*, published in 1854, but appear to be unknown to London instrument-makers. The benefits of the German silver wire used were its flexibility combined with sufficient stiffness, and its angulated sectional figure, which made it superior to cylindrical wires previously tried. The author finished with some remarks on the circumstances which enabled him to conclude that the tube had lodged in the right bronchus, and with a description of a plan of operation mentioned in a German treatise on tracheotomy, by which the bleeding, usually of an embarrassing amount, was rendered comparatively insignificant.—Mr. DURHAM congratulated the author of the paper upon the success of his operation, but did not think that he himself should be congratulated upon the tube shown being a specimen of his invention. He referred to the dangers arising from ulceration in tubes of ordinary types, and described in detail the reasons which had led him to construct the lobster-tailed tube now known by his name, of which the principle was that it should have a short curve and dip perpendicularly down into the trachea. He contended that the tube shown was a badly constructed instrument, and believed that a tube constructed on the plan he had devised would not only not be liable to the accident that had occurred in the case read, but would also be free from any of the objections urged against it by the author of the paper, who could not have seen any properly constructed instrument, the bore of which was as large as other tubes, and not more liable to be clogged. He thought Mr. Baker's tube was likely to be useful, but that it should not be used at once after operation.—Mr. MARSH said that the flexible tube invented by Mr. Baker had been used lately at the Hospital for Sick Children, Great Ormond Street, and had proved to be, as nearly as possible, an unqualified success. It had been used in four cases, did not readily clog, and could be taken out and replaced by nurses. He had found Durham's instrument open to objection from its costliness, its liability to get out of order and to be blocked up, and further, owing to its long projecting horizontal limb, it was likely to get into the way, and be tilted out of the trachea. He thought that in all cases Fuller's tube should be used, as being less expensive and safer than Durham's, but that Baker's instrument should be substituted for the rigid tube within forty-eight hours of the operation.—Mr. HOWSE thought all surgeons should be grateful to any inventor producing an improvement in the form of tracheotomy tubes. He was present in the ward when a tube ulcerated into the innominate artery, and the child bled to death in a few minutes. He pointed out that in all tubes the surgeon had largely to depend on the manufacturer; for there were some containing so little silver and so much alloy that they rapidly become corroded, and lead to the growth of granulations from the irritation

caused by their irregularities. So might it be with Mr. Baker's tube, which, either by the cupidity or stupidity of manufacturers, might occasionally be made of an inferior kind of India-rubber containing more sulphur; so that the tube, being brittle, might be torn away from its collar and slip into the trachea. Mr. Bryant had that day enlarged an old tracheotomy wound which had become obstructed by granulation, in a patient who had worn a silver tube for ten years. He had, however, only worn it at intervals, for he was in the habit (and this was an additional argument in favour of Mr. Baker's tube) of raising money on his tracheal tube. On this occasion, however, he had been unable to redeem it, and, the wound closing up, he was obliged to seek relief at the hospital.—Mr. D. NAPIER pointed out that not sulphur, but antimony, is used in the manufacture of red India-rubber, which is the best for all surgical purposes.—Mr. MORRANT BAKER was glad to hear that the best kind of India-rubber was the red, which was that selected for his tubes, and he was informed that their durability must be considerable. He had pointed out in his paper the need for roughly testing their tenacity, etc. before using them. He was inclined to agree with Mr. Marsh rather than with Mr. Durham as to the shape of the tube, and was sanguine that in time an elastic canula would be devised for use immediately after tracheotomy, and the employment of metal tubes wholly disappear.—Mr. HULKE thought Mr. Baker's tubes bid fair to obviate many of the risks following the operation by the use of rigid tubes. In reply to Mr. Durham, he said that his criticisms upon the lobster-tailed tube were based upon the examination of very many examples of it, and on inquiries of many makers. One great defect was that if the screw became loose the outer tube would slip off, as happened in his case, because it was not protected by any flange. Most of these tubes had no flange at all, and others only the merest rim to prevent such a mischance.

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Treatment of Umbilical Hernia in Children.

In the *Paris Médical*, October 12, is a description of M. ARCHAMBAULT'S treatment of umbilical hernia in children. In order to avoid the inconvenience of bandages with buttons, etc., so difficult to keep in their place, M. Archambault takes a piece of white wax, which he softens and rolls between his fingers; this ball is then split in two, so as to constitute two hemispheres. One of these hemispheres, of a size proportionate to the extent of the umbilical depression, is placed with its convex surface in the depression and maintained there by a piece of strapping. For the wax may be substituted gutta percha previously moistened in warm water. At the end of two hours the body will be sufficiently softened to adhere to the skin. From this time no bandage will be required. In this manner M. Archambault has cured umbilical hernia in less than two months.—*London Med. Record*, Nov. 15, 1876.

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Aspiratory Puncture of the Bladder.

In a communication to the Hufeland Medical Society, Dr. FÜRSTENHEIM called the attention of his colleagues to the great value of Dieulafoy's instrument for capillary puncture of the bladder, and especially in localities where practitioners may not have had practice in passing catheters in difficult cases. Here is a means of emptying the distended bladder, easy of employment, unattended with danger, and infinitely to be preferred to the ordinary hypogastric puncture of the organ, which, in discussions in recent times, has been spoken of far too lightly. So little danger is there in passing Dieulafoy's capillary trocar through the integuments into the bladder, that Lücke recommends it in the diagnosis of stone in the bladder when the ordinary means fail; and Socin does not hesitate to employ it in the same case several times daily. Deneffe and Van Wetter have collected fifty-seven cases in which it has been employed without any fatal issue; but Dr. Fürstenheim is not aware that this small yet important operation had ever been performed in Berlin, and he therefore brought before the Society a remarkable instance of its great efficacy.—*Berlin. Klin. Woch.*, October 30, and *Med. Times and Gaz.*, Nov. 25, 1876.

Treatment of Gonorrhœa.

Dr. DIDAY, of Lyons, in a work (*Thérapeutique des Maladies Vénériennes et des Maladies Cutanées*, Paris, 1876) which he says is the "fruit, now ripe, of thirty years of study and experience," sets forth the rules which, according to him, should guide the practitioner in the treatment of gonorrhœa. His opinions upon this subject, if not marked by novelty, nevertheless appear worthy of attention on account of his great experience in venereal disease; we therefore give an abstract of his precepts. He divides the ordinary course of gonorrhœa into four stages, comprising: a first stage of very short duration, during which the disease may, in certain cases, be made to abort; a second "irrepressible" stage, which commences about the third day, and lasts from four to six weeks or longer; a third stage, called "repressible," which is marked by symptoms announcing the "maturation" of the discharge; and a fourth, "chronic" stage, in which the disease becomes stationary.

(1) First stage: characterized by a feeling of warmth during micturition perceived about two and a half days after exposure, and by the appearance of a drop of semi-transparent discharge at the meatus. If at this moment an attempt is made to jugulate the disease, success is "possible, and in fact very probable," while, on the other hand, such an attempt, if unsuccessful, involves no harmful consequences. The procedure recommended is an injection of a solution of nitrate of silver, one part in ninety, to be administered by the surgeon. About one drachm of the solution should be injected, the contact of the liquid being limited to the first two inches of the canal, and maintained during five minutes. An hour or two after this injection an artificial urethritis, marked by a thick discharge with scalding during micturition, sets in, and lasts one or two days. In successful cases the discharge then wholly disappears. Failure, on the other hand, is announced after a day or two of apparent cure by the appearance of a purulent secretion, which grows daily more abundant. After such a failure a second attempt at jugulation offers little or no prospect of success. If, however, the discharge has not yet become thickly purulent, with red and swollen meatus, another trial may be made, two injections, each of a duration of five minutes, being made with the same solution as before.

(2) Irrepressible stage: when the discharge is over three days old, when it amounts to an hourly drop, when pain attends micturition or erection, when the lips of the meatus are red and shiny, all attempts to suppress the disease are for the time being useless and mischievous; useless, because the discharge can only be temporarily suppressed whatever means be used; mischievous, because the drugs upon which we rely, copaiba and cubebs, lose their efficacy by repeated administration, so that, when the time at last arrives at which the disease is amenable to curative treatment, they are liable to fail, unless the susceptibility of the patient to their influence has been economized in view of the third or "repressible" stage. The secret of success in treating gonorrhœa, says Diday, lies in patient expectation throughout this second stage, such expectation being disguised by various *placebos* (demulcent drinks, warm baths, etc.), and supplemented by certain hygienic precautions (abstinence from ale, beer, white wines, spirits; moderation in use of red wines, coffee, spices; avoidance of conjunctival inoculation, and the use of a suspensory bandage).

(3) Repressible stage: this stage is attained gradually after a mean duration of five or six weeks, sometimes less, very often longer. Not unfrequently two and a half to three months elapse before it is reached. The signs by which its advent is recognized are: the almost entire absence of pain during micturition and erection; the disappearance of the red and swollen condition of the meatus; a considerable diminution of the discharge, which should be no longer yellow or green, but whitish and viscid. This condition being attained, a suppressive medication may be instituted with good prospects of success. Diday's favorite remedy is the *opiat* of copaiba and cubebs. Properly administered, in suitable doses, this drug should, in the course of less than a week, cause the discharge to cease. The administration should be continued during a second

week, to prevent recurrence. In many cases, however, some of the many conditions of success being absent or incompletely fulfilled, the discharge still persists after the sixth day. In such cases, should the surgeon persist, or should he adjourn his attempts to repress the disease? If the discharge, though diminished to a half or a quarter of the previous amount, is still yellow, making sharply defined spots on the linen, and if the meatus is still red and shiny, if there is still smarting in the urethra, it is better to adjourn, rather than continue, the suppressive medication. Should the results of the first week of treatment, on the other hand, be more favourable, there is promise of a permanent cure being attained by perseverance in the use of the remedy; and Diday advises that the dose of copaiba be increased to the verge of tolerance, together with the use of an astringent injection.

(4) Stationary stage: this last and chronic stage is the final result of untreated or maltreated gonorrhœa, ill-directed and *inopportune* attempts at early suppression being the usual antecedent in such cases. There is little or no pain; the discharge is of small amount; the disease has become refractory to the use of copaiba and cubebs; and it readily becomes subacute under the influence of irritating agencies. In such cases the main reliance lies in the use of injections, that of Ricord, prescribed as follows, being preferred by Diday: ℞. Zinci sulphatis, grs. viij; plumbi acetatis, grs. xvj: tincturæ opii, tincturæ catechu, āā ʒss; aquæ destillatæ, ʒiv. M. S. Three injections daily.

Copaiba is no longer useful unless there still remain some traces of acuity, and then only after abstinence from the use of the drug during at least six weeks.—*Boston Med. and Surg. Journal*, Nov. 30, 1876.

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Simple Treatment of Transverse Fracture of Patella.

Dr. Ed. Hornibrook, of Mitchell, Ont., describes (*Canada Lancet*, Jan. 1876) the following simple method of treating transverse fracture of patella which he has used in several cases with excellent results:—

Dr. Hornibrook places the limb in a straight posterior splint, with the heel slightly elevated, and secured the lower fragment in an immovable position with adhesive plaster. He then places several straps of adhesive plaster lengthwise over the upper fragment, extending upwards about three inches over the anterior surface of the thigh, and allowed the free ends to hang over the patella. To these free ends he attaches a piece of strong twine to pass over a pulley, which he adjusts about two inches higher than the toes, so that the two pound weight which he attaches would hang clear of the bed. He then bandages from the toes upwards, passing the bandage under the free ends of the adhesive plasters and around the straps on the front of the thigh to prevent slipping.

According to this method the plasters do not require to be readjusted during the whole treatment, and the only apparatus required is a common posterior splint, and an empty spool to make a pulley, which can be suspended either from the ceiling or an upright post with a transverse arm.

Mr. W. T. Grant, of the Royal Infirmary, Edinburgh (*Edinburgh Medical Journal*, Oct. 1876), considering that the rarity of bony union in transverse fracture of the patella is not due to any peculiarity or absence of nutrition in the part, but to mere want of close apposition of the fragments, thought that if some steadily applied but moderate force could be brought to bear on the upper fragment, the desired end might be obtained.

After a few experiments he found the following method apparently applicable and very simple. The following case perhaps best shows its principle and method of application, which, with very slight modifications, is what he had previously used on the dead subject:—

J. R., æt. 56, labourer, was admitted to the surgical wards, Royal Infirmary, 7th August, 1876, suffering from transverse fracture of the patella, the result of indirect violence, there being also bruising of the knee on which he had fallen at the time of the accident. After an interval of two days to let the

swelling subside a little, under Mr. Bell's sanction the limb was put up in the following manner:—

The leg was placed on an inclined splint, extending from the heel to near the gluteal fold; the lower fragment was then firmly fixed in position and steadied by a strap of plaster passing right round the leg; a semilunar splint of Hyde's poroplastic material was now carefully modelled to the thigh, just above the margin of the upper fragment, and this held in position by two stout pieces of strapping, the whole being surrounded by a few turns of a convergent spica bandage.

After allowing the splint to "set," I now took two steel hooks (about the size of those used by Malgaigne) and fixed them firmly into the splint, one on each side of the patella, the hooks being connected with a steel chain about 3 feet long; this was attached to the ordinary pulley-extension apparatus with a weight of nearly 4 lbs. On allowing this to act, the upper fragment was at once felt to be drawn closely down, while the lower remained in position, and after twenty-four hours the approximation had so gone on that only with difficulty could the line of separation be felt; now it is just recognizable by a line of thickening running across the bone. The patient suffered no discomfort, except at first a sense of dragging, which soon passed off.

This method seems to me to present the advantage of being comparatively painless, while exact apposition of the fragments may be obtained by the use of a moderately applied force, which is not so great as to inconvenience the patient by pressure on the joint or by limiting movements conducive to comfort in bed.

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False Anchylosis of Knee-joint; Forcible movements followed by hemorrhage; Ligature of the Femoral Artery.

M., a boy aged fourteen, entered the Boston City Hospital, May 20, 1876, under the care of Dr. HOMANS. He was suffering from an acute attack of synovitis in the right knee, of a week's duration. Heat, pain, and effusion were present. The joint had been stiff eight or nine years.

The acute symptoms all disappeared under treatment, and efforts were made on the 26th of June to remedy the anchylosis. The boy was etherized and the leg flexed and extended with moderate force, and secured upon a ham splint.

Great swelling and pain immediately followed the operation. The constitutional disturbance was marked. This state of things persisted until the 4th of July, eight days, when fluctuation was detected in the calf of the leg. Pus having been found with the aspirator, a free incision was made, and a large amount of pus and clotted blood was turned out. The incision was three inches long, and situated over the inner border of the large muscles of the calf of the leg, midway between the knee and ankle. Both tibials pulsated. Soon after the cavity was emptied, bright arterial blood began to flow from the wound in distinct waves. The hemorrhage continued throughout the day, in spite of the ordinary measures taken to control it, and in the evening Dr. Homans tied the femoral artery in the apex of Scarpa's triangle. A moderate oozing of blood from the wound in the calf was afterwards stopped with ferric alum and a bandage.

The ligature came away on the sixteenth day, July 20th, and the wounds were all healed and the boy discharged from the hospital September 9th. The leg was flexed at a right angle, and was slightly movable at the knee-joint.

The most important point to be determined in this interesting case is the origin of the hemorrhage. Was there a rupture of the popliteal artery? It would seem that this vessel must have been wounded, or some of the larger articular branches severed near the main trunk, for the following reasons:—

Within a few hours after the operation there was enormous swelling of the whole limb, but especially prominent about the knee and ham.

At the same time the pain became so severe that the splint and bandage had to be removed.

Marked constitutional disturbances—a quick, feeble pulse, chills, hot skin, etc.—became speedily developed, and persisted.

A strong, pulsating current of arterial blood flowed from the wound when the clots were removed. The current was so strong that it could not be controlled by compresses and firm bandaging.

The fact that there was pulsation in the tibial arteries before the femoral was ligated may be explained by the supposition that the wound in the popliteal was small, and the coagulated blood confined by the dense fascia of the popliteal space served to prevent the free hemorrhage that must otherwise have taken place during those eight days following the forcible extension.

It seems rational to suppose that the popliteal artery was imbedded in the inflammatory products resulting from the previous attacks of acute joint inflammation, its normal elasticity destroyed, as well as its usual freedom in the sheath. Hence, when these parts were put on the stretch, the vessel gave way, and the blood flowed from the rent as fast as the state of the clots and adjacent tissues would allow, until, having reached the calf of the leg, its presence was more clearly shown, and the proper means taken to check it. In no other way can the symptoms be explained.

Arteries, more especially the axillary, have occasionally been ruptured in the efforts to reduce old dislocations, but such an accident under the above circumstances is fortunately very uncommon; so far as we know, none of the text-books on surgery mention it.

This case seemed to be precisely like those of false anchylosis of the knee so often met with, and there was nothing in its appearance to lead one to anticipate or fear such a complication, and we question if it would ever be possible to distinguish beforehand cases like the above from the ordinary ones, which may be forcibly manipulated with impunity, so far as the vessels of the ham are concerned.—*Boston Med. and Surg. Journal*, Oct. 19, 1876.

Midwifery and Gynæcology.

Placenta Prævia; its Physiology and its Management.

Dr. Isaac E. Taylor laid before the Obstetric Section of the New York Academy of Medicine (*Med. Record*, Dec. 16, 1876) the views which he had long held regarding the physiology and management of central implantation of the placenta. Fortunately, it was a rare occurrence. The location of the placenta, and how it came to occupy the position in which it was sometimes found, were questions that received special consideration. His remarks were based upon the following history of a case which had lately fallen under his observation.

A lady, æt. 34 years, Cuban, and the mother of five children, had been confined to her bed since June with malarial gastralgia. Distinct paroxysms of pain occurred at about two o'clock in the morning and at about the same hour in the afternoon. She became considerably enfeebled, although resolute, and at one time marked symptoms of peritonitis were developed, which subsided under the use of appropriate remedies. Her time for delivery was about the 20th or 25th of October. Dr. Taylor was called to visit the patient on the 25th of October, and found that she was suffering from considerable pain at intervals of fifteen or twenty minutes, without decided contraction of the uterus. There had been a slight show, but no hemorrhage. The pains became irregular, and after a time ceased.

On the 26th the pains were a little more active, yet there were no decided contractions of the uterus, and no hemorrhage. The cervix was long, and no distinct presenting part could be made out by vaginal examination. By external examination it became evident that there was a lateral presentation, and the fœtal heart was found to be acting well. On the 27th nothing special occurred. On the 28th a visit was made at about five o'clock in the afternoon,

when it was found that she was having distinct uterine contractions—not a painless form of contraction, as some have supposed. There was, however, nothing specifically urgent in the case, and the doctor left for home within a short time. He had, however, scarcely reached there when he received a message to return as quickly as possible, on account of the occurrence of severe flooding. It seemed that the patient, from sitting in a chair, had attempted to rise and go to her bed, when the slight show increased to a rapid loss of blood, and she suddenly lost fully one quart. The appearance of the countenance indicated severe loss of blood. A vaginal examination was made immediately upon arrival, and the neck of the uterus was found open sufficient to admit two fingers, which were passed in an inch or an inch and a half, and a placenta was distinctly felt. The vagina was tamponed with a large sponge, and consultative assistance at once called. As soon as such assistance arrived, the woman was placed under the influence of chloroform, and version was performed by a combination of external and internal manipulation, only two fingers being introduced into the uterus. The placenta was separated over a small space, the fingers were passed up, and, by assistance from above—the uterus being pressed downwards—made to rupture the membranes, when version was easily completed. The child was perfectly bloodless. The pulse of the mother after the operation was rapid, and the respiration rather quick; but she ultimately did well.

The case was interesting because it illustrated so well the views Dr. Taylor had long entertained regarding the physiology and the management of placenta prævia, and which were so markedly at variance with those held by Barnes, Playfair, Schrœder, and others.

The views entertained by Dr. Taylor were that there was *no shortening* of the neck of the cervix during pregnancy; that the placenta, in cases of central implantation, was attached to the uterus at the *internal* os, and when found in the cervical zone, it was there because it had been driven down by the head of the child. The Doctor maintained that he had repeatedly demonstrated the correctness of these views by the introduction of a cylindrical speculum two and a half or three inches in diameter, during labour (a procedure that could be easily accomplished with multiparous women, in whom the central placental presentation occurred most frequently), and observing what was taking place. He had seen, and the classes to which he had given the opportunity had also been able to see, the cervix open and close as uterine contractions came and went, as well as the exact spot where the blood came from. He had also been able to demonstrate, in the same manner and with the greatest certainty, that the placenta was not at the os tincæ at all until it had been brought there by the pressure produced by the descent of the child's head when presenting.

The head of the child, being in contact with the placenta, drove it down, when a uterine contraction took place, and when the contraction ceased the head receded, and with it the placenta. It was the gradual crowding down that separated the placenta directly from the body of the uterus, where it was originally attached; and when found at the os tincæ, in the cervical zone, it was there because it had been pushed there. The validity of that view was supported by the fact that when the Doctor visited his patient on the 26th, *then beyond full term*, the cervix was found to be long, and no presenting part could be made out by vaginal examination. On the 28th, however, he found that uterine contractions were distinct, and that a placenta could be readily touched after passing through a cervical canal an inch or an inch and a half in length. Dr. Taylor maintained that the placenta in complete presentation was over the os internum; that the os internum, and not the os tincæ, as shown by Barnes, Cazeaux, and others, was the first to yield when labour began; hence the hemorrhage came from the centre.

Reference was made to the older view in accordance with which it was supposed that the hemorrhage was due to shortening of the neck, which began about the sixth or seventh month and gradually went on until at term the cervix had completely disappeared.

The next view was that entertained by Cazeaux, in accordance with which it was supposed that the lower portion of the uterus, during the last three

months of pregnancy, underwent a special growth, and the placenta having obtained its full size, that that growth was the cause of the separation of the placenta from its attachments. Barnes's view was, that the detachment of the placenta arises from an excess of growth of the placenta over that of the cervix, and adapted itself to the expansion of the cervix during the latter part of pregnancy. It was maintained that Dr. Barnes's diagrams, and one taken from Hunter, showing the safe placental attachment; the attachment in partial presentation, also safe; and the cervical zone, which was the unsafe, or the hemorrhagic zone, certainly set aside the view of non-shortening of the cervix, and in that contradicted the statements made by the author in the text of his book.

Playfair adopted the views of Barnes and Duncan, and claimed that about two weeks previous to labour painless contraction occurred, which had a tendency to expand the cervix; the internal os gradually yielding until at the term of labour the uterus presented a perfectly oval form. From all those views Dr. Taylor dissented, and contended that the internal os remained intact throughout utero-gestation, and if a placenta was attached over it, that it also remained undisturbed until labour commenced. He had not only substantiated his views by direct observation during the progress of labour, but by post-mortem examinations in which the placenta had been found in the body of the uterus, although death had occurred from hemorrhage, and not in the neck at all. It is impossible for the placenta to grow in the cervix, and that it was necessarily attached to the body of the uterus. The uterus remained hermetically sealed until some cause brought on uterine contraction, such as a blow, a shock, a mental emotion, etc., and then labour commenced. Again, at full term, the pains began; contraction went on gradually expanding the cervix, whether placenta was there or not, the expansion beginning at the internal os; but suppose the placenta attached over that point, the result would be that it would be separated from the internal orifice before it was separated from any other portion of the uterus; the pains went on, slight hemorrhage occurred; the pains continued, the placenta became separated more and more, and the hemorrhage increased as a matter of course. If the external os was opened the size of a shilling piece, it was evidence that it had been separated probably to two-thirds the size of the child's head, and at any moment profuse hemorrhage might occur. Under such circumstances, Dr. Taylor proceeded to deliver the woman at once. There was no advantage in tamponing the vagina according to the older view, and waiting for further expansion of the cervix.

Where the placenta could be felt in the cervical zone, the labour had placed it there; Barnes had not separated it, as he believed; nature had asserted her power, and pushed the placenta down before the presenting part. What was the physician to do then? If the placenta was 5 inches in diameter, and the diameter of the child's head 3½ inches, it only remained to separate the placenta ¾ of an inch; if 6 in. in diameter, and the head 4 in. in diameter, the placenta remained attached only for a distance of an inch on each side; and now all that was necessary was to pass the finger up, separate the attachments at some point, rupture the membranes, perform bimanual version, and deliver if the child is malplaced.

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Retained Fœtus in an Old Woman.

Dr. CHIARI showed at a late meeting of the Imperial Royal Medical Society of Vienna, the organs of a woman, aged eighty-two, who died in the General Hospital of pneumonia some days previously. During life, a tumour of the size of a man's head could be felt in the hypogastric region; it was connected with the uterus. The patient had noticed the swelling since 1827, after her last pregnancy. At that time she felt herself to be pregnant; but, after eight months, no labour came on, and from this time she constantly had the abdominal tumour, which was unattended with pain, and on account of which she never had medical advice. The uterus was very large, and with its appendages on the right side were quite normal. On the left, there was a Fallopian tube five inches long, but the ovary of that side could not be found. The tumour was

connected with the uterus, to which it was adherent, and also to the omentum and to the peritoneum in Douglas's pouch. It was about seven inches long and six inches broad, and in some parts had a hard, at others a soft feel. On laying open the tumour, it was found to contain an encapsuled fœtus. The section revealed distinctly the face, spinal column, internal organs, and the umbilical cord, which passed into a structure which on microscopic examination was recognized as a placenta. Of the extremities, all were found except the left arm, which might have become incorporated with the membranes when the change of position of the fœtus took place. The structure of most of the other organs could not be made out; and they contained deposits of lesions, fat, pigment, and especially of lime-salts. The muscles of the skeleton were in the best state of preservation; the striæ could be distinctly seen in them. Dr. W. Schlesinger related the particulars of a case of retention of a dead fœtus in the abdominal cavity of a woman whom he had under observation during two years. The patient was aged thirty-four. Her first delivery, a normal one, took place fifteen years ago, she believed herself to be again pregnant. In the course of her pregnancy, she had extraordinary distension of the abdomen, the breasts became turgid, and colostrum occasionally escaped, and she said that the movements of the child were very distinct. In July, 1874, in the ninth lunar month of her pregnancy, some pains as of labour set in. Labour, however, did not take place; but the pains increased, and on the third day she felt as if a laceration of something in her abdomen had suddenly occurred. From this time the distension from which she had suffered ceased; and the only symptoms for some weeks were those of moderate peritoneal irritation. There was no hemorrhage during the pregnancy; but some days after she had the labour-pain, there was a discharge of blood which lasted nearly six weeks. When Dr. Schlesinger first saw her, in the beginning of September, the abdomen was as large as at the full term of pregnancy, though irregularly distended; it had a uniformly hard and smooth feel, as if it contained a solid tumour. At one part alone, four finger-breadths above the umbilicus, at the middle of the upper limit of the tumour, a protuberance like a finger-joint was felt. At the right side, the swelling extended as high as the ribs, but not so high in the middle as on the left. Immediately above the symphysis pubis, the abdominal integuments could be pushed in to some extent between the bone and the tumour. The latter, however, was but slightly movable. There was very little tenderness on palpation of the abdomen; but pressure on the tumour in the right hypogastric region (where the patient had from the first complained of pain) produced discomfort. Percussion over the tumour gave a hollow sound everywhere. Nothing could be heard on ascultation. Vaginal examination showed that the vaginal portion of the uterus was strongly directed backwards and drawn up; the anterior vaginal vault was somewhat pressed on, but not quite filled with a body, which appeared to have no direct connection with the swelling felt above (anteflexion of the enlarged uterus). There was an abundance of milk in the breasts; no fever. The patient complained principally of pains in the right side of the abdomen, which became worse in the evening especially, and prevented her from lying long on the left side. There was very little sanguineous discharge. Subsequently to this, measurements made at intervals of two or three months showed a steady decrease in the circumference of the abdomen; and at the same time portions of the tumour acquired a softer feel. In speaking of the differential diagnosis, Dr. Schlesinger said that the case might be supposed to be one of rapidly growing fibroid of the uterus or ovary, but that the etiological history and the course of the case opposed this supposition. The woman had menstruated regularly during the last year and a half, had no abnormal discharge of blood, and her general health was good. The case Dr. Schlesinger believed, was probably one of primary abdominal pregnancy.—*London Med. Record*, Nov. 15, 1876.

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The Performance of Operations during Pregnancy.

A protracted discussion took place at the Société de Chirurgie during several meetings in May and June, 1876, on the reciprocal influence of preg-

nancy on surgical maladies, and of traumatism on the course of pregnancy. It was commenced by a paper by M. VERNEUIL, in which he brought forward facts arranged under three categories: 1. Cases in which pregnancy appeared to exercise no influence on the course of operations or of surgical maladies, and reciprocally. 2. Cases in which pregnancy has appeared to exercise, or to be the subject of, an influence more or less favourable. 3. Cases in which the reciprocal influence of pregnancy and of operations or surgical maladies has been more or less injurious.

At a later stage of the discussion a paper was read by M. GUÉNIOT, maintaining the following conclusions: 1. Facts hitherto published lead to the conclusion that, as a general rule, pregnancy exercises no adverse influence over traumatism, but fractures and other injuries are repaired as well as in non-pregnant persons. 2. To this rule there are the following exceptions: *a*. When the traumatism affects the genital regions, pregnancy may lead to delay in healing, complications, or an unfavourable termination; *b*. The case is the same if the pregnancy has passed the third month, and traumatism affects the lower extremities, or a region which is the seat of vascular alteration; *c*. The consolidation of fractures may be somewhat impeded by pregnancy; *d*. In cases of pregnancy complicated by conditions which have a tendency to produce abortion, traumatism is likely to precipitate the abortion, and lead to grave accidents in the sequel. 3. The puerperal state has generally no unfavourable influence upon injuries received before, or at the time of delivery, unless these affect the genital regions. Traumatism which originates after parturition, on the contrary, is very unfavourably affected, and hence no operation, unless of a very urgent kind, should be performed within three or four months after delivery.

M. Verneuil, replying to M. Guéniot's paper, considered that our knowledge was not yet ripe enough for such generalizations. He believed that an undue proportion of cases had been published in which operations or severe accidents during pregnancy had not been followed by abortion, because these cases were apt to excite surprise, and that thus the statistics were unfair.

A considerable number of cases were quoted by M. Verneuil and other speakers. In many of these an operation or accident during pregnancy was followed by no ill result, but there was also a considerable number which appeared to show an adverse influence exercised by pregnancy upon traumatism, or conversely. Among the cases in question were the following:—

1. Tracheotomy was performed for œdema of the glottis on a woman pregnant 8½ months. A dead child was delivered twenty-four hours after. The mother died at the end of forty-eight hours. (M. Verneuil.)

2. Tracheotomy was performed for croup on a woman thirty-three years old, pregnant 6½ months. The patient died from hemorrhage into the bronchial tubes on the following day. Death was attributed to the hypertrophy of the veins and venous congestion, consequent upon pregnancy. (M. Marc Lée.)

3. A pregnant woman, free from syphilitic taint, suffered from ulceration of the great toe, set up by a contusion. No treatment was of any avail until she was delivered at full term. The toe then healed in ten or twelve days. This result was ascribed to disturbed circulation. (M. Verneuil.)

4. A woman, twenty-five years old, had had a vesico-vaginal fistula for fourteen months, accompanied by contraction of the vagina. An attempt to dilate the constriction was followed by inflammatory symptoms, with œdema and ulceration of the perineum. Three weeks later, when these had subsided, the constriction was again divided, and the fistula operated on. Six days after the operation, abortion took place of an ovum of two months' development. There had been no suspicion of pregnancy. The operation on the fistula was followed by success. (M. Verneuil.)

5. A pregnant woman had a soft chancre just at the fourchette. It spread by phagedænic ulceration till it had involved the anus and the thighs. The patient died of exhaustion towards the sixth month of pregnancy, having aborted shortly before her death. (M. Verneuil.)

6. A woman, aged thirty-three, had her thigh amputated for disease of the knee-joint. Menstruation had occurred twenty days previously. A month

after the operation an abscess formed in the stump, and she aborted an ovum of about six weeks' development. (M. Cazin.)

7. A girl, aged seventeen, had a fissure of the anus. Forcible dilatation was performed under chloroform. A few days after, an abortion of an early ovum took place. (M. Cazin.)

8. A woman who had had five children and no miscarriages, wounded her radial artery with a pane of glass. The artery was ligatured. Next day lymphatic inflammation came on, and the day after she aborted, being pregnant two months. (M. Cazin.)

9. A woman, pregnant six months, had a cystic tumour of the left ovary. The tumour was tapped, and nine litres of brown fluid escaped, but the abdomen was but little diminished in size. Forty-eight hours after the tapping vomiting came on, and the patient died without aborting. At the autopsy no peritonitis was found.—*Obstetrical Journal of Great Britain*, Nov. 1876.

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Inflammatory Ascites in a Fœtus of Seven Months.

In a paper read before the Société Anatomique on February 6th, 1876, M. Porak records a case in which delivery was obstructed by this cause. The patient was thirty-five years old, and was pregnant for the eighth time. Her first delivery, nine years previously, was completed by forceps after three days' labour. The fourth pregnancy terminated in a miscarriage at the sixth month, the sixth at the second month. The remainder were completed by normal deliveries at full term. No history or sign of syphilis in the patient or her husband could be discovered. From the sixth to the seventh month of pregnancy the size of the abdomen increased in an unusual and extreme degree, and she suffered from abdominal pain, and the legs became œdematous. Labour commenced on the evening of December 22d, with vigorous expulsive pains. A midwife, who was summoned, ruptured the membranes, and the head rapidly descended to the vulva, but there became arrested. Not being able to produce any effect by traction on the neck, the midwife, at the end of six hours, twisted round the head until she was able to separate it from the body. She then brought down the arms, one after the other, and pulled them off in succession. A doctor was then called in, who performed version without difficulty, but could not succeed in extracting the trunk, although he tore off both legs in the attempt. The woman was at length removed to the St. Louis Hospital. She was then in a state of extreme prostration, the uterus no longer contracting, the tongue and lips covered with sordes. The placenta was detached, and hung by the cord outside the vulva. M. Porak, introducing his left hand within the cervix, recognized indistinctly a fluctuating swelling in the abdominal region of the fœtus. He introduced a sharp-pointed crotchet, so as to pierce this swelling, and fixed it in the pelvis of the fœtus. The trunk was then extracted without difficulty, a large quantity of transparent inodorous fluid escaping at the same time. The mother never recovered from her prostration, and died at 7 P. M. on December 25th.

The fœtus did not appear to have been long dead, there being no maceration of the epidermis. The arms and legs had been separated at the elbows and knees, and the skin torn off as far as the shoulders and hips. The abdomen was much distended, having a circumference of 65 cm. It still contained a little transparent fluid, like that which had escaped during the delivery. The peritoneum was thickened, but there were no adhesions between the coils of intestine. The liver was much enlarged, so as to fill all the upper part of the abdomen, the enlargement affecting especially the left lobe. The right lobe was firmly adherent to surrounding parts. The left lobe was stained a deep olive colour by bile pigment. The right lobe was fissured on the surface, and traversed by numerous fibrous bands. Near its surface was a cyst containing blood-tinged serum, its walls formed by dense fibrous tissue. No sign of hydatids could be discovered in the cyst. There was no obstruction to the bile ducts, but the gall-bladder contained only a clear fluid.

At the autopsy of the mother a little blood-tinged serum was found in the peritoneal cavity, and the peritoneum itself was injected. There was a rent

through the left side of the cervix and the upper part of the vagina, but not extending to the peritoneum. The parts around were soft and gangrenous, and the left broad ligament was distended by a large effusion of blood, which had detached the peritoneum for a considerable extent towards the lumbar region. —*Obstetrical Journal of Great Britain*, Nov. 1876.

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An Alternative Operation for Vesico-Vaginal Fistula.

In the *Lancet* for June 17, 1876, Mr. MAUNDER discusses the method of closing the vagina in cases of vesico-vaginal fistula in which it is impossible to close the fistula. He suggests that, in order to avoid the accumulation of urine in the vagina, tending either to irritate or burst asunder the pared surfaces, a plan should be adopted similar to that of puncture of the bladder per rectum in the male. This is to pass a trocar obliquely through the recto-vaginal septum, to pass a tube through the canula, and leave it *in situ* projecting at the anus.

A case is related in which this method was carried out. The patient was forty-one years of age, the mother of eleven children. The fistula dated from a delivery by forceps, twelve months previously. A large opening in the floor of the bladder, the size of a five-shilling piece, existed, while the surrounding structures were dense and cicatricial. Operative interference with the fistula was declined by three surgeons who saw the patient. The operation for closing the vaginal outlet was performed on May 4, 1876. A thin layer of mucous membrane, at least an inch and a half in depth, was dissected off at the outlet of the vagina, a large catheter being retained in the urethra while the under surface of this was being pared. Quill sutures were used, as in the operation for ruptured perineum. The recto-vaginal septum having been perforated obliquely just behind the pared surface by a trocar introduced per rectum, a winged catheter was passed through the canula, and the end left in the vagina. On the fifth day, the catheter having become accidentally plugged, the patient sat on the pot de chambre, and strained to make water, with the effect of forcing apart the feebly united surfaces. After a few days' rest sutures were reintroduced, with the view of obtaining healing by granulation. On this occasion a silver tube was left in the rectum (No. 14 catheter size), and this was found to answer better, and never to become plugged. On the eleventh day, May 26, the sutures were removed, and on the fifteenth the tube; and the bowels were freely relieved by an aperient and enema. The urine was to be drawn off periodically per rectum, and the patient taught to use the catheter herself, if necessary. On June 3, the patient found that her water again dripped from her. The nurse had passed the catheter as usual, and a small opening into the vagina was found, just below the meatus, which appeared to be due to an improper use of the catheter.—*Obstetrical Journal of Great Britain*, Nov. 1876.

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Intra-Uterine Fibroids.

Dr. BOISSARIE gives (*Annales de Gynécologie*, Sept.) the history of a large intra-uterine fibroid in a woman aged forty-five years. At the vulvar orifice there was a large whitish mass, filling the pelvis; it was impossible to reach the pedicle or the os uteri by the finger. As far as could be felt the tumour was free from adhesions. He tried to drag it outside the vulva but failed, he therefore cut off all he could reach, with scissors; having thus emptied the vagina he could feel the os and penetrate into the uterus, but not so far as the foot of the pedicle. The os had partly closed, and in a few days it entirely closed and the patient went away. In a few months she returned with the tumour again filling the vagina, and ulcerating where it came in contact with the air. He repeated the treatment, with the result of the os completely closing, and now, after three years, the patient is perfectly cured. Dr. Boissarie is therefore contented with the result of partial removal of these large growths, as he believes that the time comes when their activity ceases, and they are absorbed; and that this time coincides with the menopause.—*London Med. Record*, Nov. 15, 1876.

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THE MONTHLY ABSTRACT

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MEDICAL SCIENCE.

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Anatomy and Physiology.

On the Constancy of a Convolution in the Temporal Lobe.

Dr. HESCHL described a convolution which he had found to be of constant occurrence, lying transversely on the surface of the temporal lobe, in a direction from within outwards. It had already been seen by many, and was figured by Henle; but no notice had been taken of it by other authors. Dr. Heschl's researches had proved to him that this convolution is the most constant and most early in appearance of all the cerebral convolutions. There are in many cases three such convolutions, in others two; but the one first referred to is constant. It is from 4 to 4½ centimetres long. It is sometimes divided by a notch; sometimes has a peculiar transverse division, showing a narrow base, and a round, indented, or angular surface. It always proceeds from the upper temporal convolution, generally by two roots; but sometimes the first temporal convolution passes into it in an arched form. Dr. Heschl's researches have further shown that this is the first convolution which can be observed in the fœtus. Indication of its appearance may be seen as early as the fifth or sixth month.—*London Med. Record*, Nov. 15, 1876.

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Case of Double Aortic Arch in the Human Subject.

Prof. MORRISON WATSON, at the meeting of the Manchester Medical Society held on the 1st inst., exhibited and described a preparation showing a very unusual condition of the great vessels, taken from the body of an elderly woman. Instead of the aorta passing upwards from left to right, and then arching over to the *left* side of the body of the fourth dorsal vertebra, it followed the middle line from the base of the heart upwards, winding round to the *right* side of the trachea and œsophagus. From the aorta a branch was given off, following the direction of the normal aortic arch, which, after supplying the left common carotid and left subclavian, became impervious, and was continued as a fibrous band, in which condition it ran on to join the dorsal aorta. Thus there was in fact a double aortic arch, as in the turtle, and through the loop formed by the two arches passed the trachea and œsophagus. The case was one of great interest especially from the embryologist's point of view; and by a series of excellent diagrams drawn on the slate in coloured chalks Prof. Watson showed what had here been the deviation from the ordinary series of changes in early embryonic life. The non-obliteration of the right aortic root, and consequent persistent condition of both roots; the full subsequent development of the right root; and the partial development only of the left (a portion of it degenerating into a fibrous band), were the main peculiarities to which attention was called. Prof. Watson found that the thoracic duct passed up to open into the *right* subclavian vein, and that the general arrangement of the large veins was somewhat unusual. He concluded a very able communication by comparing his case with others previously reported.—*Med. Times and Gaz.*, Dec. 9, 1876.

Nerves of the Spleen.

It is somewhat remarkable that, considering the size and importance of the spleen, and the obscurity that exists in regard to its functions, so small a degree of attention should have been bestowed upon the nerves that are distributed to it. The histology of this organ has now been pretty satisfactorily determined, and certain points in regard to its physiology may be considered to have been established by the labours of Funcke, Gray, Schiff, and others; but the nerves have been curtly dismissed by all authors, and Frey, one of the most recent who speaks with authority, merely says that they take origin from the plexus linealis of the sympathetic, and consist principally, and not unfrequently almost exclusively, of the pale elements known as Remak's fibres. A recent paper by Bulgak, which has appeared in the *Centralblatt*, supplies some interesting particulars in regard to the origin and distribution of the splenic nerves, and the effects of applying stimuli to them. His experiments were made upon dogs that had been previously partially narcotized by morphia or chloroform, The method he adopted was to open the abdomen by a crucial incision, and, after exposing the spleen with as little injury as possible, to cover the intestines and abdomen generally with soft linen cloths dipped in an artificial serum. The nerves surrounding the vessels were then excited by a weak galvanic stimulus. The results he has obtained show very clearly that the nerves distributed to the spleen are of two kinds, centripetal and centrifugal, for on excitation of the central extremity of one set of nerves when divided, well-marked, general contractions of the spleen occurred which were obviously of a reflex character, and at the same time the animal, if at all sensible, gave indications of pain by its movements and cries. No such results followed excitation of the distal extremity. On the other hand, the irritation of the centric extremity of other nerves, when divided, caused no contraction or indications of pain, whilst irritation of their distal extremity induced contraction of the spleen, limited to the part to which the nerve was distributed. Excitation of the nerves generally caused the spleen to become harder, paler, and more granular on the surface than natural.

The determination of these facts led M. Bulgak to seek for the reflex centre, which receives the sensory and radiates the motor impulses to the muscular fibres, or, to use a phrase which is very convenient, to the "musculature" of the spleen. He soon found that all indications of reflex action ceased if the splanchnics were divided, and by a process of exclusion he at length demonstrated that all the motor and sensory fibres of the spleen ran in the great splanchnic nerve of the left side; on the division of this nerve, all signs of reflex action disappeared. It was thus sufficiently obvious that the centre was not in the cœliac ganglion, as has been generally believed, but was probably to be looked for in the spinal cord; and experiments made, with a view to determine its exact position, gave the following results. Induced currents of electricity applied to the cord at its junction with the medulla oblongata produced no effect, but when applied to the cord just below this point, strong contraction of the whole spleen was immediately observed. Similar contractions occurred when any part of the cord was stimulated as low down as to the fourth cervical vertebra, but below this point they became feebler and feebler till they ceased altogether about the eleventh dorsal vertebra. From these and other experiments, he concludes that the splenic centripetal and centrifugal nerves enter the cord as low as the eleventh dorsal vertebra, and that they ascend in the cord to a sensori-motor centre situated in the cord between the fourth and first cervical vertebræ. It is probable also that the vaso-motor nerves of the spleen proceed from the same source. Some observations made to determine the effects of nerve irritation on the number of the white corpuscles issuing from the spleen showed that the number was greatest during the ordinary non-contracted condition of the spleen, that it diminished on contraction of the organ, and attained its minimum during the period of return to the normal state. If, however, the spleen were made to contract after it had been

previously swollen by ligature of the veins, the number of leucocytes contained in the splenic venous blood underwent great augmentation.—*Lancet*, Dec. 23, 1876.

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The Supracondyloid Process in Man.

Dr. C. von Patruban has for some years collected statistics regarding the supracondyloid process, the relations of which to the muscles, vessels, and nerves, were almost constant. The subject was of practical importance, inasmuch as persons who had this process—especially if they happened to have glandular swellings—were sometimes regarded as syphilitic, and treated with mercury. A supernumerary head of the pronator teres always comes from it; and the brachial artery with its venæ comites and the median nerve and lymphatics always pass behind it. M. Gruber has shown that this process forms a canal, to which he gives the name of canalis fibro-osseus. Dr. von Patruban showed the process in a number of preparations.—*Lond. Med. Record*, Dec. 15, 1876.

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The Secretion of Milk.

Some important experiments have lately been made by Dr. A. Röhrig (Virchow's *Archiv*, vol. lxvii. p. 119) to determine whether the nervous or the vascular element has the greatest influence over the secretion of milk. The animals used were curarized goats, into whose udder a canula was pushed, through the excretory duct, as high as the milk-sac, the outer end being connected with an aspirator of weak suction-power. By this arrangement the milk could be carefully collected during the whole time that an experiment lasted. By means of a graduated tube which was inserted between the canula and the aspirator the milk could be easily measured, and it was found that under ordinary circumstances about ten drops were secreted every five minutes. Now, if the inferior branch of the external spermatic (pudic) nerve, which supplies the chief bloodvessels of the part, were divided, it was found that the secretion of milk was very much increased—even twenty-fold, in fact, in some of the experiments—while it was arrested by electrical stimulation of the peripheral portion; so that the vaso-motor influence of this nerve appears to have far the largest share in causing variations in the quantity of milk secreted, and this simply by increasing or diminishing the calibre of the vessels. That the secretion of milk is mainly dependent on the blood-supply of the gland was further proved by artificially increasing the arterial blood-pressure by such drugs as strychnine, caffeine, and digitaline, all of which increased the secretion of milk, although the nerves going to the mamma were previously divided. The action of strychnine was especially remarkable, the secretion of milk being raised to as much as fifteen times that of the normal. Jaborandi, too, proved a powerful galactogogue. On the other hand, drugs which diminished the blood-pressure reduced the secretion of milk. In this respect the influence of chloral hydrate was very striking, for the secretion, after a temporary primary increase, which lasted about six or seven minutes, was almost completely suppressed for a whole day. Atropine and bromide of potassium were much less powerful in their effect. The dependence of the milk secretion on the pressure of the blood was further proved by raising and diminishing the latter by stimulation of the central and peripheral portions, respectively, of the pneumogastric nerve, and registering the alterations in pressure by means of a kymograph. The tracings showed that the rise and fall in blood-pressure corresponded closely to the rise and fall in the secretion of milk. Dr. Röhrig directs attention in his remarks on these experiments to the therapeutic importance of his results, and the indications they supply for the rational use of drugs in combating derangements of the mammary function.—*Med Times and Gaz.*, Dec. 16, 1876.

Independence of Ovulation and Menstruation.

M. DE SINÉTY read an account on December 2, at the Société de Biologie, of the autopsy on one of M. Charcot's cases of hysterical hemianæsthesia and pain in the situation of the ovary of the same side. This patient had begun to menstruate at thirteen years, and had menstruated almost regularly since that time. The right ovary was further removed from the uterus than the left. On the side of the right ovary was a small hemispherical tumour the size of the end of a finger Histological examination showed that there was not a single Graafian follicle arrived at what is called the "ascensional period." The uterine mucous membrane was swollen and vascular; its glands were hypertrophied, and even infiltrated with globular elements. In fact this mucous membrane presented the aspect of the urterus during menstruation. This patient had menstruated two months before her death. There were no corpora lutea or cicatrices in her ovaries. It was therefore evident that no ovule had been expelled from these ovaries for some considerable time. It was, in fact, a case of menstruation without ovulation. M. de Sinéty also referred to cases where, on the other hand, there had been ovulation without menstruation; and recorded one case of a patient who had undergone double ovariotomy, and in whom, a few months afterwards, menstruation recommenced, and recurred at regular intervals.—*Med. Times and Gaz.*, Dec. 16, 1876.

Materia Medica and Therapeutics.

A Ready Solvent of Salicylic Acid.

Dr. DUFFEY, of Mercer's Hospital, states (*British Med. Journal*, Nov. 4, 1876) that several alkaline salts—*e.g.*, sodium phosphate and bicarbonate, borax, and more recently ammonium citrate—have been used for promoting the aqueous solution of salicylic acid; and formulæ for the administration of the drug in solution with rectified spirit and glycerine have also been published. He recently ascertained that a permanently clear solution of the acid can be conveniently obtained by dissolving it in liquor ammoniæ acetatis (B. P.). This solution he thinks will be found more palatable than any of those hitherto employed, and less likely to cause the burning sensation in the throat and gastric irritation which often attend the administration of salicylic acid in large doses. The formulæ which he used in a case of acute rheumatism was ℞ Acidi salicylici, gr. 120; liq. ammon. acetatis, ℥ij; aquæ, ℥vj. M. Fiat mistura, and gave one-eighth part (= gr. xv of salicylic acid) every hour. The addition of some flavouring agent, and compounding the mixture with some aromatic water would doubtless render it more pleasing to the taste.—*Practitioner*, Dec. 1876.

Medicinal Properties of Œnothera Biennis.

Dr. N. S DAVIS, of Chicago, writes to the *American Practitioner* (January, 1877) that about eighteen months since, in the latter part of summer, a lady a little past the middle period of life came from the southern part of Illinois to Chicago, partly for medical advice and partly with the hope that the change of air would do her good. On examination I learned that she had been afflicted many years with indigestion and bronchial asthma. She was much emaciated, her chest contracted, her breathing all the time difficult, but much worse during the night, and accompanied by all shades of dry râles, yet natural resonance on percussion, and only scanty mucous expectoration. The extremities were cool and bluish, lips livid, and pulse small, soft and frequent. Her tongue was

clean, redder than natural, and stomach so irritable that it would retain but little food or medicine. Her appetite was poor, and every kind of food, even in small quantities, caused more or less epigastric distress with an increase of the dyspnœa and sometimes palpitation of the heart. There was hardly a remedy either for the dyspnœa or the gastric irritation, that I could suggest, which she had not already tried and found unavailing.

Not long after their arrival in the city, her husband met a friend who urged him earnestly to try the fluid extract of the Œnothera Biennis. He accordingly purchased a small vial of the remedy and commenced giving her twenty-five drops every three hours. On visiting her two days after, I found her decidedly more comfortable in all respects. The medicine, instead of troubling her stomach, had actually allayed its irritability, so that she was taking more nourishment, and her breathing was less difficult. The improvement thus begun continued under a continuance of the same medicine, and in a few weeks she returned to the south, and I have never heard from her since.

Since that time, however, I have prescribed the same remedy in more than twenty cases of asthma, associated with chronic indigestion or gastric irritability, and in all of them with more or less benefit. Recently Mr. M., aged fifty-five years, engaged in intellectual pursuits, was attacked with pain in the right side of the chest, a harsh cough, scanty expectoration, slight acceleration of pulse, and considerable feeling of oppression in breathing. He had suffered from gastric irritation and indigestion several years, and had been so generally sickened by medicines when prescribed for him that he had become decidedly sceptical in regard to the beneficial effects of any remedy in his own case. And although feeling so much inconvenience from the pain in his side, and other effects of what he regarded as a recent cold, that he called on me for advice, yet he protested in advance against taking any anodynes or expectorants as sure to "upset his stomach." I prescribed for him simply the fluid extract of the œnothera biennis, in doses of twenty-five drops each before meal time, and thirty drops at bedtime, to be taken in half a tablespoonful of water. The symptoms of bronchial irritation and the pain in his side soon began to abate, and in eight or ten days disappeared; the remedy not only produced no unpleasant effects on the stomach, but apparently induced a decided improvement in both appetite and digestion. So marked was this latter effect that he continued to take the twenty-five drops before each meal time for nearly four weeks; at the end of which time he informed me he could "sit down to the table and eat a dinner of good hearty food without any inconvenience whatever," an act that he had not been able to perform with similar impunity for several years previous.

My object in this short paper being simply to call the attention of the profession to the remedial value of the œnothera, it is not necessary to relate more cases in detail. From my own clinical observations, I am inclined to regard it as a mild but efficient sedative to nervous sensibility, acting more especially on the pneumogastric nerve. Hence its adaptation to the treatment of such cases of respiratory or gastric trouble as involve a morbid sensitiveness either in the laryngeal, pulmonary, or gastric branches of that nerve, whether of an acute or chronic character. It is certainly worthy of further trial in the treatment of such affections as hooping-cough, spasmodic asthma, and certain morbidly sensitive conditions of the stomach interfering with healthy digestion.

The œnothera biennis, or evening primrose, grows abundantly throughout all the middle and northern states, if not throughout our whole country. Full botanical descriptions of it may be found in all our works on botany. As a medicine it may be used in the form of an infusion or fluid extract. The former may be given to adults in doses of one or two tablespoonfuls; the latter of from twenty to thirty minims repeated every three, four or six hours, as the case may require.

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On a Glycerole of Nitrate of Bismuth as a Remedy in Skin Diseases, and in some other Conditions.

Mr. BALMANNO SQUIRE, Surgeon to the British Hospital for Diseases of the skin, a short time since, contributed an article to the *Medical Times and*

Gazette, describing the preparation and detailing the advantages of a glycerole of the subacetate of lead. The result already has been, he says (*Ibid.*, Dec. 9, 1876), that the preparation is now commonly used by practitioners throughout the country, not only for the purpose for which I originally designed it—that is to say, for use as an application for the treatment of various chronic diseases of the skin (more especially for the treatment of chronic eczema), but furthermore as a useful means of employing lead topically in the treatment of diseases of the uterus. The advantages of lead as a local application in many various conditions have been long appreciated; and this new preparation of it has evidently been found to be a serviceable one.

The advantages of bismuth as a local application in certain conditions are equally appreciated, but the difficulty of employing it in a liquid form is a well-known obstacle to the development of its valuable properties. Like lead, it acts as a topical sedative and astringent. Its chief use is as a local application to the interior of the stomach, and accordingly it is largely prescribed as a sedative in cases of painful digestion and as an astringent in cases of water-brash. It is also, but less largely, used as a remedy in skin diseases; and it has been found serviceable as an injection in lingering gonorrhœa attended with exceptionally profuse purulent discharge. I was therefore desirous of having a glycerole of it if possible. Accordingly, I applied to one of the leading chemists in this city, and requested him to make me up a solution of the nitrate of bismuth in glycerine, to take away with me. I was assured by him that it was impossible, inasmuch as the salt would not dissolve in glycerine; and, as another difficulty, the nitrate of bismuth was never kept in stock—there was no demand for it. I pressed him to procure some and to dissolve it for me. He promised to do so, but told me he knew perfectly well what would be the result. The next day I received from him a perfectly clear solution containing a drachm of nitrate of bismuth dissolved thoroughly in an ounce of glycerine. Now, this is in many ways, I venture to affirm, a valuable preparation—more valuable, perhaps, on the whole than the glycerole of the subacetate of lead. Here we have a soluble preparation of the simple salt of bismuth; and a tolerably strong solution too. The liquor bismuthi et ammoniæ citratis of the Pharmacopœia is of course a *double* salt, and it is a question whether it has in full all of the valuable qualities as a local application of the *simple* salt of bismuth. On putting some of my glycerole on the tip of my tongue, I found it merely astringent, and slightly acidulous. On rubbing it well into my tongue I found only the same effect, but more decided in degree. I was told that I should find the preparation very irritating, inasmuch as the salt comes under the chemical heading of "acid salts;" but I do not find it so even in the least degree. I thought I would just ascertain that my friend had really dissolved the quantity of bismuth he professed to have done, by availing myself of the simple test of pouring a little of it into a wineglassful of water, and stirring the mixture up with my finger to see how much white precipitate of trisnitrate of bismuth I should get. To my astonishment, I got no precipitate. So I poured in a little more; still no precipitate whatever. However, I left the glass to stand for an hour or two, and then looked at it again, and found a milkiness of the solution, and a fine milky deposit on the surface of the glass. I therefore arrived at two conclusions—the one is that nitrate of bismuth, which is so utterly insoluble in water, is perfectly soluble in glycerine; and furthermore that the presence of glycerine in water is capable of delaying, more or less, the precipitation of the nitrate of bismuth in it. So that where glycerine is a permissible vehicle we have now a ready means of *applying* a simple solution of bismuth; and where glycerine is not permissible as a vehicle we have equally a ready means of *administering* a simple solution of bismuth in water, provided we do not mix it too long before it is required to be used.

As an application to the skin, or to the vagina or uterus, or to the throat, when bismuth in solution is required, nothing can be better than the solution of the nitrate of bismuth in glycerine. As a mixture to be taken internally, nothing more is necessary than that the mixture should be ordered as a solution of the salt in glycerine—one teaspoonful for a dose, to be mixed in half a wineglassful of water before taking it. Then, if the patient does not look too

long at it before he swallows it, he will certainly swallow a perfectly clear solution, and one, moreover, which will probably do him more good than any other preparation of bismuth that has yet been devised.

Medicine.

On the "Abortive" Treatment of Typhoid in Children.

M. Bouchut has been delivering a clinical lecture at the Children's Hospital in Paris, *àpropos* of the present outbreak of typhoid. The remarks (as reported in the *Gazette des Hôpitaux*, November 30) bear chiefly on the treatment of this malady in children. We are informed that this acute specific disease, if seized early enough, can be "strangled, its flight arrested, and its gravity diminished" by the "abortive treatment." There is nothing new in this abortive treatment; it consists in bleeding for adults and emetics for children—a distinction in practice made long before M. Bouchut by Sydenham himself. The great English physician, speaking of the manifold diseases known to him only under the common title of "continued fever," says, in his modest way—"it is *just possible* that we *may* quash the disease at its onset" by the use of emetics. We will not deny that some cases of gastro-enteritis may be arrested by such means; but if M. Bouchut asserts that by giving tartar emetic as late as the fourth day of the disease he can strangle typhoid, will he kindly tell us what proof he has to offer that it really was typhoid? French treatment is nothing without its *rationale*. We are told first that the value of tartar emetic is that it is an antipyretic. Doubtless; but we protest against the assumption that merely converting a patient's condition from pyrexia into collapse is to be regarded with unbounded satisfaction. Collapse has its dangers as well as pyrexia. In order to harmonize the abortive treatment with the modern views as to acute specific diseases, M. Bouchut says that the vomiting set up expels the "ferments" which would otherwise multiply in the stomach, etc. Does the effect of the vomiting reach to Peyer's patches? Is the poison wholly contained in the mucus which is expelled? Are we certain that even in the earliest condition the poison exists nowhere but in or rather on the alimentary tract, as M. Bouchut's therapeutics would seem to imply? M. Bouchut follows up his emetic by giving thirty grammes (nearly an ounce) of sulphate of soda or sulphate of magnesia. This, we are told, is "very efficacious against the development of monads" in the intestine. We know nothing about monads; we can only say that the treatment of early typhoid by strong saline purgatives has appeared to us "very efficacious in the development" of intractable diarrhœa. Deliver us from scientific therapeutics!—*Med. Times and Gaz.*, Dec. 16, 1876.

Results of Cold-Bath Treatment of Typhoid.

M. Féréol has given a valuable *résumé* of the results of cold-bath treatment of typhoid at the Maison Municipale de Santé at Paris. He states that he was driven to the use of cold baths by the severe mortality of 27 per cent. of cases of typhoid under his care, treated by ordinary methods, in the year 1873. M. Féréol considers as indications for cold-bath treatment, at first hyperpyrexia, with the concurrence of grave general signs; then ataxic phenomena, continuous delirium, convulsive movements, carphology, etc.; finally, extreme frequency of pulse. He does not regard hemorrhages as a formal contra-indication.

As to adynamia, pulmonary congestions, and the specially thoracic forms of typhoid, he is determined not to allow them to deter him from the use of this method. In the years '74, '75, '76, M. Féréol has had 153 patients suffering

from typhoid. The mortality was 29—*i. e.*, 18.95 per cent.—as compared with 27 in 1873, when the cold-bath treatment was not adopted. It is obvious that, to form a proper estimate of the use of cold baths, only severe cases must be compared. By a further analysis, M. Féréol shows that of 38 severe cases treated by bathing, 26 recovered and 12 died—*i. e*, there was a mortality of 31.6 per cent. whilst ten died out of twenty-four serious cases treated by ordinary methods—*i. e.*, there was a mortality of 41.66 per cent. M. Féréol anticipates an objection which might be made that he could not be sure that all his cold-bath patients would not have recovered if treated by any other method. He has never prescribed cold baths except where he had reason to fear that cold affusions would be insufficient, and where there was an assemblage of grave symptoms, but he makes no pretence to an absolute prognosis. M. Féréol discusses in detail the limitations which have been put on this method of treatment—first with regard to hæmoptysis. One patient who was not subjected to cold baths had hæmoptysis, and two had commenced to spit blood before being so subjected. MM. Labbé and Raynaud state that in the present epidemic they have observed this complication in several patients not treated by cold baths. The two patients who had previously spat blood, and who, notwithstanding, were subjected to cold baths, succumbed to broncho-pneumonia and asphyxial coma. One of them after a single bath (at 82.5° Fahr.) had an immediate recurrence of hæmoptysis. These two patients would undoubtedly have succumbed if the baths had not been given. On the other hand, two patients who had hæmoptysis in the course of cold-bath treatment recovered. In these cases M. Féréol is convinced that the baths had no influence in determining the hæmoptysis, because they had been discontinued five days before the blood-spitting appeared. M. Féréol considered the hæmoptysis in one of these cases as beneficial rather than otherwise; and, in the other case, though abundant and persistent, he did not look upon it as of grave import. To sum up—there were seven cases of hæmoptysis, of whom five recovered, and two died. One patient had hæmoptysis, and was not treated by cold baths; he recovered. Of the six others, four recovered, two died (but they had both spat blood before the baths were given). With regard to other pulmonary complications, many bad cases of broncho-pneumonia recovered. In a tuberculous patient, who was also the subject of alcoholism, and who was exceedingly delirious, M. Féréol resorted to cold baths with the best result as regards the delirium, and without any obvious evil influence on the tuberculosis. As to *late* epistaxis, one patient so suffering recovered under cold-bath treatment; the other case (in whom the epistaxis was very severe, and had commenced before the baths were tried) was fatal. With regard to intestinal hemorrhages, there were two recoveries and one death amongst those treated by cold baths. M. Féréol had not a single case of perforation amongst his "cold-bath patients." This complication caused death in three patients treated by other methods. It would appear that cold-bath treatment was attended with little benefit in cases where there was great frequency of the pulse. M. Féréol, after a conscientious examination, is unable to recall a single case in which the fatal issue could be attributed without doubt to the cold-bath treatment.—*Med. Times and Gaz.*, Jan. 6, 1877.

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Anomalous Cases of Typhoid Fever.

M. Dreyfus has recorded, at the Anatomical Society of Paris (*Progrès Médical*, December 9), the case of a man aged eighteen, who, during the course of an attack of typhoid of moderate severity, began, on the eighteenth day of his illness, to complain of sharp pain in the right iliac fossa; he also suffered from abdominal distension and from repeated vomiting. The patient died on the twentieth day. On opening the abdominal cavity, there was a gush from a hole about one-fifth of an inch in diameter, of a considerable quantity of yellow material. This proceeded from the neighbourhood of the right iliac fossa. The intestines were glued together by recent lymph. On opening them up, the orifice whence the fecal material had escaped was found to be at the

summit of a diverticulum, which was situated about six inches from the cæcum. This diverticulum did not appear to possess either a Peyer's patch or solitary glands. *Throughout the intestine no lesion was found in Peyer's patches* till the patch just above the cæcum was examined, where a minute ulcer about one line broad was seen. Nothing was found in the cæcum or colon. The mesenteric glands were large and soft; the spleen also was large and soft. M. Charcot, in the subsequent discussion, recorded the case of a young man who succumbed to an intestinal perforation after having presented symptoms of typhoid fever, and in whom also the lesions in Peyer's patches were insignificant.

Case 2.—M. MILLARD showed, at the Société Médicale des Hôpitaux (*Gazette des Hôpitaux*, December 12), specimens from a case of typhoid. A youth of fifteen and a half on the twenty-first day was seized with a sharp pain in the whole of the abdomen. There was no vomiting at first, but the temperature went down to 98.2°. Two days after, the patient had vomiting, and was expected to sink, but this expectation was not verified; he survived several days. His abdomen became extremely retracted, and he became excessively emaciated. On the thirty-second day he vomited some pure blood, and on the thirty-third day this was repeated. On the thirty-fourth day there were black stools. On the thirty-fifth day the patient died. At the post-mortem some ulceration was found, extensive both as to length and depth, on the anterior wall of the stomach; and on the posterior wall a veritable round ulcer. There were the ordinary lesions of typhoid fever, and general peritonitis, with pus and adhesions. Besides this, there was evidence of some old ulceration of the appendix, probably anterior to the typhoid. The cause of the peritonitis was not clearly accounted for. In Sir William Jenner's cases the occurrence of ulceration of the stomach is noted only once, and then there were numerous minute losses of substance—quite a different condition from M. Millard's case, of which we could have wished for a little more detailed account.—*Med. Times and Gaz.*, Jan. 6, 1877.

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Salicylic Acid in Acute Rheumatism.

At the December meeting of the Medical Society of the Royal College of Physicians in Ireland, Dr. J. W. MOORE communicated the results of his experience of this remedy in the treatment of acute rheumatism in the Meath Hospital and County Dublin Infirmary. Detailed observations of six cases were given, and brief notes of ten cases treated by other methods were appended for the sake of comparison. The ten patients spent an average period of 26.6 days under treatment in hospital. The average duration of the stay in the wards of those who were given salicylic acid was 14.8, and this, too, although most of the patients treated by it were purposely kept under observation for many days after the symptoms had disappeared. The mean duration of the sojourn in hospital is now only about *one-half* what it used to be. Again, an examination of the clinical charts in the cases shows that under the ordinary methods of treatment the average number of "days of pyrexia," or days on which the axillary temperature reached or exceeded 99° Fahr., was 19.3. Under salicylic acid, on the contrary, it was 5.5 days. So that the symptom of feverishness was but *one-fourth* as persistent in the second series of cases as it had been in the first. If it were fair to base any definite opinion on so few observations, the author would give the following conclusions as to the value of the new treatment: 1. Salicylic acid appears to be a valuable and almost specific remedy in the treatment of acute rheumatism. 2. After the administration of a few moderate doses of five grains each, given at hourly intervals, a marked amelioration of the symptoms usually occurs. Thus, the temperature and pulse begin to fall, the swelling and pain of the affected joints subside, and the patient sleeps. 3. The above doses—*i. e.*, of five grains each—are quite sufficient to produce an impression on the disease, while the patients make but little complaint either of the frequency of the dose or of the taste of the medicine. 4. When pushed far, it sometimes causes singing in the ears

and diaphoresis. Under these circumstances its administration should be temporarily suspended. 5. To prevent relapse, it should be given for some days, but at gradually lengthening intervals. 6. Finally, as to its probable action as a preventive of the dangerous cardiac lesions of acute rheumatism, the author could only endorse the words of Dr. Coates, of Belfast, in a recent paper: "I think it can hardly be denied that medicines which cut short the disease, as I believe there can be no doubt salicylic acid does, must render the liability to these complications less."—*Med. Times and Gaz.*, Dec. 30, 1876.

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On the Expectant Treatment of Chorea.

Drs. E. B. Gray and H. M. Tuckwell, Physicians to the Radcliffe Infirmary, Oxford, published about five years ago in the *Lancet* (1871, vol. ii. pp. 778, 814), a series of cases of chorea, in the treatment of which all medicines had been withheld, and reliance had been placed solely on nursing and good diet. They then showed by a comparison of the average duration of their cases with the average duration of cases treated with arsenic and other routine drugs, that the expectant treatment was at least as successful as the treatment by medicine. Since that time they have continued to work in the same direction, and now record (*Lancet*, Nov. 88, 1876) twenty more cases, in which the whole natural duration of the disease uninfluenced by medicine has been accurately estimated. In every instance the parents or friends were closely questioned as to the earliest appearance of twitching, and the patient was kept under observation till all irregular movements had ceased.

Brief *résumés* of the clinical history of each case are given, and the paper is concluded with the following remarks:—

In our former communication we showed that the average duration of chorea treated on the expectant plan was, as far as our observations had then gone, from ten to eleven weeks; and that the average duration of chorea treated with arsenic in gradually increasing doses, according to Begbie's plan, was likewise from ten to eleven weeks, the difference, if any, being slightly in favour of the expectant plan. We also compared these results with the estimate of Dr. Hillier, who, in his work on Diseases of Children, gives the mean duration of thirty cases treated with arsenic, etc., as "about ten weeks;" and with Sée's estimate of "sixty-nine days," as the average duration of 117 cases treated with various medicines.

Of the twenty cases above recorded, the average duration is found to be rather over nine weeks, a still more favourable result than that before given. Or, taking the average of the whole thirty-eight cases published in this and the previous paper, we find nine weeks and six days to be the average duration of chorea treated without medicine. It is singular that this corresponds with Sée's average to a day.

Case 20 is worthy of special notice, in that it presented to view many of the worst features of chorea in its fatal form. The convulsions, so violent as to jerk the child over a high wall of pillows, like a fish, on to the floor, the body, sore and fissured from friction, the rapid wasting, the wild delirium—were just the symptoms present in other cases which we have seen die in this infirmary, when plied with all sorts of active medicines. A very noteworthy point is the rapid improvement which took place naturally on the ninth and tenth days of the attack. Had a believer in arsenic been called in on the evening of the ninth day, and ordered large doses of Fowler's solution, the return of sleep and subsidence of the convulsions would, doubtless, have been attributed to the arsenic or to any other drug—bromide of potassium, succus conii, Calabar bean, zinc, iron, chloral, chloroform, etc.—which might have been ordered at that lucky, or unlucky, moment. This natural and restorative sleep might well be compared to the sleep which ushers in recovery in delirium tremens, and comes best of itself when a patient is well nourished, and kept free from all kinds of narcotics. An isolated ward; a good nurse; a large crib, well padded round, and walled in with pillows; plenty of nutritious food, without stimulants, on these we shall feel inclined to rely in the treatment of severe chorea, till we

obtain more conclusive evidence than has yet been adduced that the disease can, in the slightest degree, be favourably influenced by any medicine as yet discovered.

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Zunker on Two Cases of Vaso-Motor Neurosis.

The first case (*Berliner Klinische Wochenscrift*, August 21 and 28) was that of a robust man, aged twenty, who presented himself, at the Clinic, for nettlerash. He had had a rather obstinate attack of the same kind two years before, but had otherwise been quite healthy. The present eruption appeared on May 26. It commenced on the arms and chest, and soon spread to every part but the face, though the aspect of this was so peculiar as to at once attract attention. The chin and both cheeks, temples, and ears, were deep red, shining, and tense, though without any circumscribed hardness. The temperature of the parts was apparently not increased; the pupils were equal, both enormously dilated; reaction to light was good. On the chest and abdomen were moderately large isolated or confluent patches, of reddish colour and irregular form; they were associated with resistent, sharply defined, pale-red elevations. On pressure with the finger-nail or with a sharp instrument, they could be produced with absolute certainty. The sensations felt during their artificial production consisted in itching, and a transient feeling of warmth. No source of reflex irritation could be discovered; the organs of digestion, circulation, and respiration appeared perfectly normal. Strychnine and atropia were successively tried, in combination with tepid baths, but without effect; and it was not till June 12, when 13 lbs. of sea-salt were added to the bath daily, that the symptoms began to subside. No fresh spots showed themselves; the redness and turgescence of the face disappeared, and the pupils became of the normal size. On June 19 he was discharged at his own request, having then no subjective troubles. The patient was made the subject of many experiments. The following were the changes produced by simple mechanical irritation with a blunt instrument. First, a transient paleness, common to all skins, appeared; then cutis anserina developed itself, not only in the irritated stripe itself, but for a varying distance beyond it. At the end of thirty seconds a slight, though distinct redness appeared in the centre of the stripe, and, a few seconds later, the skin bordering upon it became paler, while the redness increased until it corresponded exactly with the breadth of the instrument and the course taken by it. As the redness deepened, the pale zone grew more marked, and sent out, here and there, processes which were bordered in turn by a third zone of pale red colour. At the end of two minutes, by which time the third zone was complete, the skin of the central red stripe became elevated, especially around the hair-follicles. This elevation extended itself first to the entire irritated surface, and then crossed over into the pale zone, of which it occupied about two-thirds. At the same time the outer red zone began to grow inwards, so that, in four or five minutes, a white, sharply defined, very elevated wheal, upon a vividly red ground, presented itself. The raised surface was flat throughout; the prominences of the papillæ and hair-follicles having disappeared. In from fifteen to twenty minutes the redness began to fade, the wheal became smaller, and finally disappeared, leaving, as the only trace of its existence, a palish, slightly elevated semi-resistent spot, which lasted in one instance about eight hours. Experiments were next made to ascertain whether other modes of irritation would produce the same results. Heat, cold, nitric acid, faradization, galvanism, all failed, though the patient seemed very irritable to the last of these. The development of a wheal could be arrested by means of ether-spray; and mechanical irritation failed to produce them on a surface made anæsthetic by this, though the susceptibility to their production returned with the resumption of sensation. When irritation was applied to a limb rendered bloodless by Esmarch's bandage, no change was produced until the elastic tube was removed, when the wheals appeared as usual. Similar, though not quite such complete results were obtained by digital compression of the main artery of the limb; a red stripe appeared, which afterwards became bluish, and on the removal of the pressure, provided this

were early, the wheal showed itself. The results obtained by compression of the veins were the same as those described by Auspitz.

The second patient, also aged twenty, was a worker in white lead, and was in the hospital for lead-colic. Wheals, similar to those of the other patient, could also be produced in him; the paleness, however, was much more fugitive, and the elevation was somewhat less marked. Their production seemed to depend upon the presence of lead in the system; for, as the symptom of poisoning diminished, the difficulty of eliciting them increased, and, some days before the skin had recovered its normal sensibility, the experiment failed altogether. The same attempts were made as in the other case to produce them by irritation other than mechanical; and with similar results. The only exception was that, when Esmarch's bandage was used, the wheals did not show themselves on the removal of the ligature. Indeed, irritation soon after its removal failed to produce any effect. The wheals were believed to consist in a serous infiltration of the rete mocusum and the superficial layer of the corium; and not, as in Gull's cases, in a contraction of the muscular fibres of the skin. The pale zone was referred to a direct peripheral contraction of the vessels, and not to reflex action; the outer red zone, on the other hand, was attributed to a reflex dilatation of the vessels; the increased irritability lying in the vaso-motor nerves, and not in those of sensation. The central area of redness was explained by the dilatation of the arterioles consequent partly upon mechanical irritation, partly upon a congestion compensatory to the surrounding anæmia. Further, since the capillaries and venules were not at first correspondingly dilated, an obstruction to the flow of blood ensued, which resulted in the transudation of the liquor sanguinis. The quantity of this, if great, would cause the elevation to transcend the limits of the irritated surface. Reasons, derived in part from observation of these cases, in part from the physiological and pathological experiments of others, are given for these conclusions.—*London Med. Record*, Dec. 15, 1876.

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Subcutaneous Injection of Morphia in the Treatment of Sciatica, Lumbago, and Brachialgia.

Dr. Henry Lawson, Assistant-Physician to St. Mary's Hospital, London, since the publication of his work on this subject, has accumulated additional experience which he now lays before the profession (*Med. Times and Gaz.*, Dec. 16, 1876). He says: "I have had more than seven years' experience of the results of the subcutaneous injection of morphia, and I have seen more than eighty cases of these forms of nerve-affection—some of them excessively bad cases—and in not more than three did this treatment prove a failure. That is to say, that subcutaneous injection of morphia invariably gave relief—in most instances complete relief—and that by means of this relief the patient was enabled to eat or drink with comfort, and by help of perchloride of iron, and in some cases by cod-liver oil he was thus enabled to put on flesh rapidly, and to repair the waste of tissue under which he had been labouring. And here I would mention that a remedy which is most valuable as a restorative in these cases is the hypophosphite of soda. Indeed, I think it as good a mode of administering phosphorus as any other. But in hospital cases it is questionable whether it can be beneficially employed, for we all know that the present system of administering drugs in many of our hospitals is most objectionable and faulty. It must be confessed that we owe our knowledge of this drug and its valuable effects in great measure to the recommendation of Dr. C. B. Radcliffe, to whom indeed, I think, we may give all the credit of introducing the phosphorus into the medical treatment adopted by this country.

It is as a means of relieving the pain that I administer the morphia—not, as some have erroneously imagined, as a means alone of curing the disease; and while the patient is painless there must be, as I have already laid down, every attention paid to his feeding, his walking, his warmth, and his *ease of mind*; to this last above all, for, be assured, a patient whose mind is kept constantly in a condition of worry cannot be improved in bodily condition by any mode of treatment whatever.

Of course the salt I employ is that of the muriate of morphia dissolved in pure distilled water alone. Take five grains of this salt, and add to them a single drachm of water, then heat the mixture over a spirit-lamp, and a perfect solution will form. This will, on cooling, in winter assume a rigidly solid condition, and in summer, save in very hot weather, will be unfitted for injection if cold. And here it is necessary to say that most muriate of morphia, as got from local chemists, is worthless. I have tried at many houses, where I have obtained other drugs in a comparatively pure state, to obtain pure muriate of morphia, but in vain. It, when so obtained, was found to dissolve with excessive difficulty, to form a muddy instead of a perfectly clear liquid, and to leave a certain amount undissolved. Hence I have for years obtained the morphia I use from Messrs. Hopkins and Williams, of Cross-street, Hatton-garden, of whom, it is perhaps needless to say, I never obtained any but the very purest salt, which was readily and completely soluble in warm water.

With regard to injection, I may say that a further experience has borne out my remarks of four years ago—viz., that it is of importance to make the injection as close to the seat of pain as possible. It would, of course, be utterly out of my power to attempt any explanation of this. Indeed, as far as physiology is concerned, the facts would appear to be against this view. But I simply say that my experience—and it is derived from many trials on my patients—points to this, that to allay pain most successfully by subcutaneous injection of morphia, we must, as a rule, inject as close to the seat of pain as possible. As a fact that likewise is opposed by some physiological reasoners, we may mention that the best treatment of acute bronchitis is the production of an irritation of the surface of the chest. This is well known by the medical man, but it cannot be explained by certain physiologists, who therefore suggest that counter-irritation in any other direction would be equally efficacious. But we know that it is not.

And as to needles. I have had considerable experience, having made many thousand punctures with their aid; and I have come to the conclusion that, as the instrument is made nowadays, in most cases it is utterly and entirely wrong. I will not say that the instrument-makers are to blame for this, but assuredly whoever first ordered the gigantic instruments considerably over two inches in length that are generally appended to a subcutaneous syringe case, made a grievous mistake, and, furthermore, committed an error which, in its results, falls on both the patient and the practitioner. On the former it tells by the production of occasional abscesses, which we know are produced sometimes if a needle is introduced to a depth of two inches into the skin; and also by the fact that the drug is not so rapidly absorbed, for any one with the smallest knowledge of microscopic anatomy is aware that the portion of the integument immediately beneath the "zone of indifferent tissue" is loaded with minute bloodvessels, while further in you have merely loose connective tissue, with, of course, larger vessels, but not anything like numerous vascular parts you have got above. Then, secondly, it tells against the physician, for, if he has many injections to perform, we may put down as a moderate allowance for breakage at least one needle in three weeks. And these two or three errors may be easily avoided by using a needle of not more than half an inch in length. My own needle barely measures three-eighths of an inch long, yet the last needle that I obtained I have used in at least seven hundred instances, and it yet shows no symptom of yielding; it is as firm as when it left the maker's hands. And here I must offer a piece of advice to the beginner. In the first place, you should always use silver wire for plugging your needles with when they are put in the case, and invariably employ plain steel needles—firstly, because they are less easily broken than gold; secondly, because they are finer in make; thirdly, because they retain their points exceedingly well, which gold does not; and fourthly, and most important, because they are driven in with one-fourth of the pressure that is required for a gold needle. And here I may mention that the judicious practitioner will invariably cleanse his syringe before laying it aside. This is essential in the case of morphia injections, for if it be not done the instrument will be unfit for use on the next occasion. It is easily done: just draw up enough pure water to fill

the instrument, then force half of it through the nozzle, and next partly unscrewing the needle, and closing the point with the finger and thumb of the right hand, inject the remainder of the pure water through the screw part that unites needle and cylinder. Then place the wire in the needle and your instrument is ready for its case, and will be immediately fit for use when required again. These directions may seem trivial, but those who follow them will not be of that opinion.

With regard to the quantity of morphia solution that may be injected, I have had since the publication of my treatise on Sciatica some peculiar experience. I mean that I have met with some cases in which such a small dose produced such excessive vomiting that at first I thought I should have had to give up this method. And, indeed, I should have desisted giving the injection had not the patients invariably declared that, notwithstanding the illness it occasioned, they would still persist in having the injection, because, as they alleged, it so greatly diminished the pain even forty-eight hours after it was done,[1] while for some hours it absolutely prevented it. In three of these cases the largest dose that could be given subcutaneously without the infliction of vomiting was the one-twenty-fourth of a grain, so that in each of them I was compelled to make a specially diluted solution, as it would have been difficult to estimate that proportion in case my own solution were employed.

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Chloral and Chlorate of Potash in Diphtheria.

Dr. CIATTAGLIA strongly recommends (*Presse Méd.-Belge*, Aug. 13, 1876) the local application three or four times a day of a mixture of chloral (one drachm) and glycerine (five drachms). Since he has employed this he has met with remarkable success. He gives internally chlorate of potash in doses of two and a half to four drachms for children and five drachms for adults per diem, dissolved in thirty-five drachms of water. He had already derived great advantage from the chlorate, but since he has combined with it the local use of chloral his success has been much greater. The development of the diphtheritic patches is arrested, and the disgusting odour of the disease disappears, if not at the first, at the second application. The chloral, also, is much more manageable in glycerine, the burning sensation being less, while it is longer retained in contact with the parts than when dissolved in water.—*Med. Times and Gaz.*, Nov. 18, 1876.

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The Ice Treatment in Croup.

The manner of pursuing this treatment is, as related by Dr. BETZ (*Memorabilien*, vol. xxi. No. 10), to take an ice-bag, or an ice-bladder, filled with small pieces of pounded ice, and apply to the throat. In order that it may remain in proper contact with the skin, bind it with a light cloth upon the neck. In high temperature, even ice with salt is used. This admixture generates, as is known, a stronger, and therefore a deeper extent of cold than the ice alone. The bag or bladder should not be left upon the neck until the ice is entirely melted, but changed as often as is necessary to prevent vacillation of the temperature. By this treatment the anterior surface of the larynx becomes reduced to a very low temperature, owing to the superficial situation of the trachea over the mucous membrane; hence the exudative process from it ceases. Besides, the air passing through the trachea and larynx and into the lungs is deprived of its heat, which heat reduction acts favourably upon the lungs. This treatment, therefore, is to be considered the rational, abortive, and preservative treatment in croup, if we employ it early, energetically, and long enough.

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[1] In regard to this peculiar inequality in the results of doses, some very interesting observations will be found recorded in Dr. J. Harley's classic treatise "The Old Vegetable Neurotics"—a work published some few years since by Macmillan & Co. Dr. Harley has found the examples in woman; our experience is precisely identical.

Should the doctor come too late, it may be impossible to prevent the formation of a false membrane, then the ice treatment, instead of an operation, is of very great value. The intense cold acts upon the bloodvessels of the neck, contracting and depleting. The ice application has this advantage in the after treatment, that the wound from an operation is less likely to become diphtheritic, and thus heals more quickly and swells less, and the scar makes a slighter deformity. After an operation a folded cloth should be dipped in ice-water or placed on a piece of ice, and a few minutes afterward laid over the canula and wound. By this means, a cooling of the inspired air is effected.

During the last ten years I have made twenty-three tracheotomies in croup, with only eight recoveries, a result, however, with which one can be satisfied. In a recent case treated in the above manner, the wound healed so readily that on the tenth day no more air passed through the tracheal wound; and on the fourteenth day after the operation, the patient could again drive in the open air. A more speedy cure could not well be obtained. To be sure, in this case the diphtheria showed itself only upon the larnyx. It is in those cases, however, where the false membrane extends into the trachea, that you expect the greatest usefulness from the ice treatment.—*American Practitioner*, January, 1877.

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Rare Disease of the Larynx.

Dr. B. Baginsky showed at the Medical Society of Berlin, a boy, aged twelve and a half years, the subject of a diseased condition of the larynx and trachea which he had not found described in literature. The disease occupied the larynx and trachea, which could be examined by sunlight or by good artificial light as far as the eighth or ninth ring. For some time the boy's mouth had had a disagreeable smell, and he had coughed up offensive greenish masses; in other respects his health was good, he was fairly well developed, and there was no family history of scrofula or syphilis. There was slight pharyngeal catarrh, and swelling of both lower nasal fossæ. On examination with the laryngoscope, between the true vocal cords and on the wall of the thyroid and cricoid cartilages, and especially in the trachea, there were seen soft greenish-gray masses, firmly adherent to the mucous membrane, from which small portions were occasionally dislodged by coughing. Between them the mucous membrane was denuded of its epithelium, eroded, and bleeding readily. Treatment by inhalations of carbolic acid, resolvents, and astringents, and the internal use of syrup of iodide of iron, had as yet been without result. Microscopic examination of the green masses showed a quantity of epithelium that had undergone fatty degeneration, with crystals of tyrosin and small moving corpuscles. The disease had a great resemblance to nasal ozena, and the condition called by Waldenberg pharyngitis impetiginoides. Dr. Baginsky believed that it was not analogous to putrid bronchitis; in this disease, the expectoration was very abundant and fluid, while in the present case it was very scanty. From the resemblance to nasal ozæna, he would propose for it the name of laryngo-tracheal ozæna. The prognosis was unfavourable, as perichondritis was to be feared. Dr. Baginsky also showed in the same patient a specimen of benign mycosis of the pharynx.—Herr B. Frankel said that he had several times seen the patient. He had seen several cases of ozæna of the larynx, and had referred to them in his article on Ozæna in Ziemssen's *Cyclopædia*. But, until he saw this case, he had never met with one in which the fetid masses were below instead of above the vocal cords. As regards the fetid masses in the trachea, he had found much fatty epithelium and fungi; and also crystals of tyrosin. He could not determine whether there was any connection as regarded cause between the fetid deposits and the mycosis of the pharynx. However this might be, leptothrix was present in both.—*London Med. Record*, Dec. 15, 1876.

Empyema, in which the washing out of the Pleural Cavity was followed by Fatal Convulsions.

Dr. CAYLEY detailed this case at a late meeting of the Clinical Society of London (*Med. Times and Gazette*, Nov. 11, 1876). The patient was a man, aged thirty-six, who was admitted into the Middlesex Hospital five weeks after being attacked by right pleurisy. On admission, there was extensive effusion and great dyspnœa. Three days after his admission, his chest was punctured below the angle of the scapula, and twenty-three ounces of serum were drawn off by the aspirator. This gave great relief, but did not diminish the dulness in front and in the axilla, thus proving that the fluid was contained in different loculi shut off by adhesions. Four days afterwards the chest was punctured again near the former puncture, and also in the fifth interspace, a little outside the vertical mammary line, and six ounces of bloody serum were obtained by each puncture. There still continued to be dulness and absence of expansion in front of the axilla below the level of the nipple, showing that a third cavity filled with fluid was present. The patient's dyspnœa was much relieved, but he became hectic, and lost flesh and strength. Eight days afterwards, the physical signs remaining unaltered, the chest was punctured in the sixth interspace at the anterior border of the axilla, and twelve ounces of fetid pus were withdrawn. The cavity was now washed out daily with a weak solution of iodine, and half an ounce of equal parts of tincture of iodine and water, for which the undiluted tincture was afterwards substituted, was injected and left. Under this treatment, which had to be interrupted for a few days on account of the formation of a superficial abscess on the chest-wall, great improvement took place; the patient lost his hectic, gained flesh and strength; the discharge diminished and became quite free from fetor. On the tenth repetition of the operation, however, while rather a larger quantity than usual of the dilute solution of iodine (half an ounce of the tincture to a pint of warm water) was being injected, the patient suddenly became deadly pale, his pulse slow, breathing gasping, and pupils dilated. Those symptoms were immediately succeeded by rigidity of the muscles and general convulsions. The pulse and breathing now became extremely rapid; the temperature ran up to 107° in the axilla; he remained profoundly comatose, and died in sixteen hours. Nothing was found, on post-mortem examination, to account for the symptoms; there was neither thrombosis of the pulmonary veins nor embolism of the brain. Dr. Cayley then referred to three similar cases which had occurred in France; one proved fatal in six hours; in another, the convulsions soon passed off, but, on again washing out the pleura, they recurred and ended fatally; in the third case, they passed off, the treatment of the empyema was resumed, and a cure effected. In neither of the two fatal cases was any embolism or thrombosis discovered. Whether these convulsions were reflex or due to an embolism which had escaped detection could not yet be decided. That embolism was liable to occur during pleurisy, both after paracentesis and where no operation had been performed, was proved by many cases on record, to some of which he referred. The practical lessons were to perform paracentesis early where there is much effusion, and not allow the lung to be compressed so long as to undergo the formation of thrombi in the pulmonary veins; and, where it becomes necessary to wash out the pleural cavity, to use great caution in injecting—these convulsions having in every case come on while the fluid was being injected, and not while it was being withdrawn; and, in two cases at least, rather a larger quantity than usual was being used. The nature of the fluid used seemed to be without influence. In one case, it was a weak solution of iodine; in a second, warm water, to which a little alcohol had been added; in a third, a solution of phenic acid; in a fourth, warm water only. In all the cases the operation had previously been performed many times with impunity; in one, daily for three months.

Abscess of the Abdomen Simulating a Pneumothorax.

Dr. F. LEVISON, of Copenhagen, reports (*Nordiskt Medicinskt Arkiv*, Bd. 8 No. 20) the case of a woman, twenty-two years of age, who entered the hospital with all the symptoms of a peritonitis caused by an ulcer of the stomach. Several days later, the percussion of the left subscapular region gave a tympanitic sound over an extent of three to four centimetres, while a dull sound was found above as well as beneath this tympanitic zone. Two days later the tympanitic sound had extended over the entire left surface of the back, as far as the spine of the scapula, and in these regions the respiration and the sound of the voice had an amphoric character. The diagnosis was made of a pyopneumothorax, caused by perforation of the diaphragm, and, to relieve the patient, two punctures were made in the seventh and eighth intercostal spaces. Considerable gas, but no liquid escaped; the stethoscopic signs remained nearly the same. A diphtheritic affection of the respiratory passages supervened and caused the death of the patient.

The autopsy demonstrated fresh adhesions between the stomach, the right lobe of the liver, the gall-bladder, the spleen, and the diaphragm. A cavity was formed by these adhesions, communicating with the stomach by a pretty large perforation, and containing gas and a little pus, but without any communication with the cavity of the left pleura, where, consequently, neither gas nor liquid was found. The diaphragm had been driven upwards in such a manner that the trocar necessarily passed through it to enter the cavity formed by the adhesions.

This case is quite remarkable from its rarity; it is rendered still more so by the support it affords to the theory which attributes the formation of the physical signs noticed in pneumothorax, and called amphoric voice and respiration, metallic tinkling, etc., to the modification of the pulmonary sounds by a stratum of air adjacent to the lungs, but without communication with the bronchi.—*Med. Record*, Jan. 20, 1877.

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The Treatment of Colliquative Diarrhœa.

The diarrhœa which often occurs towards the close of life in patients suffering from long-standing nervous disease or other conditions productive of cachexia, and in many cases independent of organic disease, is the most rebellious to ordinary astringent and sedative remedies. Dr. BONFIGLI has recently called attention to this form of diarrhœa, which he calls *vaso-paralytic*, in which the evacuations are frequent, watery, or serous, and no lesion is found in the bowels after death, such as waxy degeneration or ulceration, only at most some slight injection of the mucous coat. From a consideration of its physiological action, he was led to try chlorate of potash as a remedy, and in fifteen cases he gained very markedly beneficial results from its use. He found it necessary to continue its employment for some time in severe cases, and the diarrhœa was held in check only so long as the drug was given. He recommends the increase of the dose until a beneficial effect is observed, beginning at half a drachm in the twenty-four hours, and increasing to two or three drachms if requisite. When, however, there is degeneration of the mucous coat, or when the diarrhœa is maintained by intestinal catarrh, the drug exerted little or no effect. On the latter point the observations of the author appear to be at variance with those of the late Dr. Copland.

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Case of Complete Intestinal Obstruction for eighteen weeks yielding afterwards spontaneously.

A very remarkable instance of this is recorded by Dr. J. G. BLAKE, in the *Boston Medical and Surgical Journal* (Nov. 23, 1876). The subject of it was a man 46 years of age; had enjoyed good health previously. When seen by Dr. B., February 29, the patient was in bed, complaining that his bowels had not been well acted upon, though he had taken salts, castor oil, and pills.

The stools consisted of glairy mucus mixed with blood. No tumour or marked tenderness of any point of the abdomen could be detected. He was free from pain; pulse 72. This condition continued during the next week, when he began to be troubled with tympanites and vomiting. Hiccough also appeared about the end of the second week. He then began to emaciate, until towards the close he was literally a living skeleton. On the morning of the 27th June the bowels moved spontaneously. Then followed numerous evacuations from the bowels, from which he became exhausted, and died July 4th, nineteen weeks from the beginning of his illness. No post-mortem examination could be obtained, so that the cause of the obstruction remains unknown.

The treatment consisted of enemata freely used, laxatives on several occasions, which, increasing the pain, were not persevered in, inflation, morphia, and, for the tympanites, aspiration. This last afforded great relief, and saved him many times from death; during sixteen weeks it was resorted to one hundred and fifty times. No sign of peritonitis followed these repeated punctures.

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Intussusception; Separation and Expulsion of a Large Portion of the Ileum; Recovery.

Dr. EDWIN P. GERRY, of Jamaica Plain, reports to the Norfolk District Medical Society (*Boston Med. and Surg. Journ.*, Dec. 28, 1876) a case of the above-mentioned lesion of extreme rarity and interest. The patient was a man, aged seventy-one years, and when first seen, June 29, 1876, complained of pain in the abdomen, referred to a point two inches below the umbilicus. It was ascertained that for three days previous to this attack he had experienced colicky pains, on account of which Epsom salts had been resorted to with good effect. In the course of a few hours the symptoms became aggravated and alarming, and of a character to leave but little doubt as to the existence of intestinal obstruction. Copious enemata were now administered, and the patient, having had a free action of the bowels and having vomited several gallons of a reddish-brown liquid, appeared to obtain complete relief.

The obstruction once relieved, he continued to convalesce favourably upon a stimulating liquid diet until July 9, when he experienced another ill turn, characterized by cold hands and feet, and a feeling of general malaise. This passed off, however, and he continued to gain until July 16, sixteen days after the original attack, when an elevation of temperature was observed with accelerated pulse, which continued until the 21st. At no time, however, was the rate of the pulse above 80, and the highest temperature recorded was 102.8° F.

Upon the morning of the 21st, three weeks after the first illness, there was expelled per rectum a portion of the small intestine measuring *seventeen and one-eighth inches* in length, forming probably that part of the ileum lying immediately beneath the umbilicus. The specimen was displayed by Dr. Gerry. It exhibited throughout traces of the exudation of lymph, and at the points of separation looked gangrenous and worm-eaten. From the circumstance that the specimen, when expelled, was not inverted, Dr. Morrill Wyman (who, among others, had seen the case in consultation) had concluded that the intussusception might have been upwards.

After the expulsion of the intestine, the patient had a free dejection. His appetite returned, and he continued to improve until August 4, upon which day abdominal pains set in, accompanied by tympanites, so great as to induce dyspnœa. Relief was afforded, however, in the course of a few hours, after considerable thick liquor had been thrown up, coming apparently from the stomach and upper part of the small intestine. The vomiting, which supervened at the time, continued subsequently to constitute the prominent symptoms. It has at times been excessive, the patient ejecting this liquid every few minutes for a period of forty-eight hours; while, at other times, the stomach has been able to retain the ingesta for one or two weeks. The usual quantity vomited at any one time was about a quart, but latterly the vomiting has been growing less and less severe. Dr. Gerry was inclined to attribute this obstinate symptom to the catarrhal condition of the bowel, the muscular

fibres of which had been subjected to long-continued distension and relaxation by the accumulation of retained feces. This relaxed portion of the intestine formed, when distended, a sort of pouch, which could be distinctly felt, adherent apparently at certain points to the walls of the peritoneum.

At the present time a distinct ring can be felt upon pressure, occupying the seat below the umbilicus to which the pain was originally referred. Dr. Gerry thought it remarkable that the process of separation of the invaginated intestine by the process of gangrene should have been attended by such comparatively trivial constitutional symptoms.

Dr. H. A. MARTIN, who had seen the case in consultation several times, from June 29 to July 15, observed that he considered it one of the most remarkable in the history of pathology. The most striking and extraordinary features of the case were :—

(1) The very great length of the invaginated intestine separated and expelled.

(2) The absence of severe pain and stercoraceous vomiting.

(3) The advanced age of the patient in connection with his survival of so grave a lesion.

Upon his first examination, on the first day of the illness (June 29), he found on careful percussion of the abdomen a region of great flatness, corresponding in situation to the cæcum, and occupying about one-fourth of the entire abdominal surface; one very limited portion of the region was tender, but not very materially so, upon pressure. This same spot was also the seat of continued slight pain and occasional severe exacerbations. This was the most prominent symptom, and the one for which the patient asked relief. It yielded promptly, however, to the hypodermic administration of morphia (gr. one-sixth pro re nata).

Dr. Martin suggested, moreover, the administration at short intervals of very copious enemata, with the view of distending the large intestine and thus relieving the invagination, provided that was the source of the trouble, and of dissolving the fecal mass and facilitating its expulsion, if the obstruction was due to scybalous accumulation. Upon the next day, June 30, the area of flatness was unchanged. On the third day, however, July 1, the flatness had entirely left the region of the cæcum, had been transferred to the other side of the abdomen, and was limited below by the sigmoid flexure, involving about the lower two-thirds of the transverse and descending colon. In the light of subsequent developments, it would appear that there had been an intussusception of the small intestine through the ileo-cæcal valve, which with fecal accumulation had given rise to the flatness at first noticed; and that the subsequent change of the area of flatness from the region of the cæcum to that of the colon, was attributable to the passage of the disentangled and perhaps distended intestine, with the fecal mass, to the descending colon, at which point a second temporary obstruction was met with.

Although, at the outset, his prognosis had been hopeful, when, upon the third day the hands became cold, he could not but regard this significant symptom as pathognomonic of gangrene, and therefore of the gravest portent. The symptoms took a favourable turn, however, when affairs seemed the most desperate, and at the next visit, July 2, the hands had become warm, pain and vomiting had ceased, while very large discharges of broken scybala had come away, and the patient seemed in every way so far on the road to recovery that Dr. Martin declined further attendance, except in the event of the return of bad symptoms. He was requested to visit the patient again in consultation, thirteen days after, July 15, and found him doing very well, with a history since his previous visit of apparently good convalescence; and he did not consider the peculiar irregularity of the pulse first noticed during that period of any pathognomonic importance whatever.[1]

[1] The pulse was of that description in which, without any other peculiarity, a beat is dropped at very regular intervals. All physicians of experience must have repeatedly seen cases in which this pulse (in the aged), habitual in health, becomes regular in sickness, the irregularity returning with convalescence.

He certainly had abandoned all notion of intussusception in the case, and was amazed to hear that only a few days after the visit so large a portion of the intestine had sloughed, a process that must have occupied from two to three weeks, and had been evacuated.

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New Test for Albumen in the Urine.

At a recent meeting of the Société de Biologie de Paris (*Le Lyon Médical*, Nov. 1876) M. BOUCHARD read a paper on the employment of the double iodide of mercury and potassium as a test for albumen in the urine. According to him, the test is very delicate, and so much so that the absence of albumen may be positively affirmed, when the urine does not cloud on the addition of this reagent. There are certain sources of error in the test, however, which must be borne in mind:—

1. The error may depend upon the reagent itself, when it can be easily avoided by adding an excess of iodide of potassium to the solution.
2. If mucine be present in the urine, or white precipitate analogous to the albuminous precipitate, it is formed on adding the double iodide, but it forms slowly, while albumen is thrown down at once.
3. If the urates be present, a precipitate may also be thrown down, but it forms slowly in the middle, instead of at the bottom of the test-tube; is not flocculent; and finally disappears under the influence of heat.
4. When the urine is alkaline, a precipitate may form even if no albumen be present, but it has a gray colour, and becomes black in a few seconds.
5. The presence of alkaloids in the urine may also lead to the formation of a precipitate, but it is not flocculent, begins to form in the middle of the test-tube, and disappears under the influence of alcohol or heat.

In a word, every precipitate which persists after the employment of heat, is due to the presence of albumen in the urine.—*Med. Record*, Dec. 23, 1876.

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Malignant Lymphoma treated by Arsenic.

Dr. VON WINIWARTER related, at a late meeting of the Imperial Royal Medical Society of Vienna, a case in Professor Billroth's clinic, in which a remarkable result followed the treatment of a malignant lymphoma by arsenic. The patient, a man aged twenty-nine, said that in October, 1874, after being stung by a wasp, he had swelling of the left axillary and cervical glands, and afterwards of the inguinal glands of the same side. In the autumn of 1875 the glands of the right side began to enlarge, and he had dyspnœa and palpitation. On his admission on February 14, 1876, there was remarkable enlargement of the lymphatic glands of the neck, trunk, and upper limbs. The percussion-sound over the left half of the chest was dull; the heart was displaced to the right, and the spleen was considerably enlarged. The number of white corpuscles in the blood was not increased, and his nutrition was good. He was ordered to take Fowler's arsenical solution and tinctura ferri pomata, five drops of each, every morning, the dose being increased by one drop daily. The largest daily dose of the arsenical solution in one day was forty-two drops; after this the quantity was reduced. There were no toxic symptoms. The result, as shown by a photograph, was very marked. The gland-tumours had in great part entirely disappeared, but some could still be felt. The dulness on the left side of the chest and the displacement of the heart still remained. The case was brought before the society, though still incomplete, as the man was leaving the hospital; but Dr. Von Winiwarter hoped that, under a continuance of the arsenical treatment, a permanent cure would be obtained.—*London Med. Record*, Nov. 15, 1876.

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The Hypodermic Treatment of Syphilis.

A paper on this subject was read before the Imperial Royal Medical Society of Vienna by Dr. NEUMANN. After giving a short historical sketch of the method of treatment by ingestion, and of the appearance which the various

preparations of mercury produced on the skin, he proceeded to speak of the action of mercury-albuminate and mercury-peptone. He had never met with abscess or sloughing; when the pain was considerable, it depended greatly on the vulnerability of the individual, on the dexterity with which the operation was performed, and on the purity of the solution and of the canula. An estimate of the comparative value of the fluids used for injection may be formed by selecting (*e. g.*) the skin of the back or of the side of the chest or of the buttock, and injecting into one part albuminate of mercury, into another mercury-peptone, into another an aqueous solution of corrosive sublimate, or a combination of this with morphia. It will then be found beyond doubt that the solution in albumen, recommended by Bamberger, produces the least pain and the least reaction. It is not perfectly painless; but neither abscess nor sloughing of the skin has been observed to follow the use of the solution, if pure. Dr. Neumann gave the following as the reason why the solution in albumen produces less pain than the aqueous solution. It is known that many irritants lose their caustic action when dissolved in oil, glycerine, or albumen. This is daily observed in the case of carbolic acid and caustic potash. The same is the case with corrosive sublimate, though here chemical conditions must have some influence, for the absorption of the sublimate into the juices of the organism occurs only as a result of its combination with albuminoid substances. Corrosive sublimate dissolved in water must combine with the albumen in the subcutane ous connective tissue, and this combination can only be carried into the circulation after having undergone decomposition, just as corrosive sublimate in the stomach combines first with the albuminous substances in that organ, and, if there be not enough of these, with the mucous membrane of the stomach itself, so as to produce irritation. The advantages above described as attending the use of albumen and also of peptone solutions were not met with when the injections were made into other parts than those mentioned, such as the arms or hands, or into indurated tissue. With regard to peptone-mercury, the following was the result of experiments made on several patients: As is well known, peptone is a white amorphous body, soluble in water in almost any proportion. It causes very little pain, and produces less reaction at the point of injection than the albuminate. As regards the number of injections, from twenty to fifty are necessary to cause the disappearance of the various manifestations of syphilis. Dr. Neumann found, with other observers, that the vesicular, papular, and squamous syphilides disappeared most rapidly; one case only, of chronic macular syphilide, required fifty injections; while the eruption with small particles, and also enlarged lymphatic glands, was slow in disappearing. In cases of indurations not yet followed by general symptoms, the injections did not prevent the eruptions from appearing. Psoriasis palmaris and plantaris was rapidly relieved by the injection. Injections into indurated tissue produced circumscribed sloughing. Affections of the mucous membrane and syphilitic tubercle arranged in groups, demanded a larger number of injections. Gummata resisted injection remarkably; whether a result followed rapidly in cases of syphilitic iritis, the author could not state from his own experience. Lewin has described brilliant results in this affection. In one case of double iritis, little or no effect was produced. Dr. Neumann had injected only three centigrammes, when he was obliged to desist in consequence of œdematous swelling at the point of injection and consecutive œdema of the eyelids. He had used the injections sometimes once, sometimes twice a day, and had never met with toxic symptoms. Stomatitis occurred in two patients only, after seven and fifteen injections; the only preventive measures prescribed were, to cleanse the teeth carefully, and to rinse the mouth frequently with water. The injection treatment does not secure against relapses, but whether they appear more rapidly cannot yet be decided. Lewin observed 30 per cent. of relapses, which were, according to his statement, less severe than after other methods. The slight reaction which follows the injection of pure albumen or peptone solutions of mercury, the accuracy with which the dose can be measured, the small quantities (on an average 15 to 25 centigrammes) required to subdue the syphilitic symptoms, the freedom of the stomach from irritation, especially in debilitated persons, the cleanliness of the application, the rarity of

stomatitis, and the rapidity with which cure follows the use of sufficient doses, are evident; and the rapid elimination of the mercury must relieve even the antimercurialists of fear of mischief. Dr. Neumann had in his cases not met with certain symptoms described by others, as being produced by this method, such as elevation of temperature (to 104° Fahr.), increased frequency of pulse, sleeplessness, and profuse diarrhœa.—*London Med. Record*, Dec. 15, 1876.

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Skin-Eruption from Bromide of Potassium.

Dr. PINSKER, of the Leopoldstadt Children's Hospital, in presenting a patient to the Imperial Royal Medical Society of Vienna, October 20, 1876, said that the occurrence of cutaneous eruption after the use of bromide of potassium had been already described by Voisin, Weir Mitchell, and Neumann; but still he regarded the case which he presented as rare. The patient was an idiotic boy aged ten. From his second year he had suffered from epileptic attacks, at first occurring at rare intervals, afterwards more frequently; and a year ago his mother sought medical advice. Five grammes (seventy-five grains) of bromide of potassium were administered daily, with occasional interruptions. In December, 1875, he was sent to the Children's Hospital as having smallpox. There was an abundant pustular exanthem on the forehead and temples and on the trunk and limbs, besides some vesicular exanthem. The history and course of the case led to the diagnosis of bromine-acne. The patient was dismissed after having been four weeks under treatment. He was again treated by bromide of potassium, in daily doses, according to the mother's account, of 45 grains. The eruption, which had lasted three months, was treated, without effect, by diachylon ointment. Within the last ten days, under purely expectant treatment, there had been a marked decrease both in the extent and the intensity of the eruption.—*London Med. Record*, Dec. 15, 1876.

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Galvano-Caustic in Skin Diseases.

NEUMANN (*Allgem. Wiener Mediz. Zeitung*, No. 28, 1876) describes a galvano-caustic apparatus made for him by Leiter, of Vienna, which he recommends especially for the destruction of isolated lupus-nodules. The advantages of the apparatus consist in facilities for fixing the part, and limiting accurately the depth of the tissue which is to be destroyed.—*London Med. Record*, Dec. 15, 1876.

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Treatment of Acne Rosacea.

NEUMANN (*Allgem. Wiener Mediz. Zeitung*, No. 37, 1876) has found excellent results from brushing the affected skin with a solution of one part of carbolic acid in three or four parts of alcohol. The application is made three times a week, and produces no cicatrix. The treatment is not applicable when there is much thickening and œdema.—*London Med. Gazette*, Dec. 15, 1876.

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The Relation of Diabetes to Skin-Diseases.

PICK (*Medicinisch-Chirurgisches Centralblatt*, No. 34, 1876) describes cases of pruritus and furunculosis, in which these maladies were developed in diabetic patients. He believes that the diabetes and skin-lesions are produced by a common cause, and that the origin of both is to be found in a disordered condition of the brain. Some cases of skin-affection are, on the other hand, the effect of the diabetes. Amongst these are instanced certain forms of eczema, xeroderma, pruritus, furunculosis, and a special affection of the mucous membrane of the mouth, which he designates epitheliosis mucosæ oris.—*London Med. Record*, Dec. 15, 1876.

Surgery.

On a Foreign Body in the Globe of the Eye for Fourteen Years.

In the *Recueil d'Ophthalmologie* for October, 1876, Dr. MARTIN, of Marseilles, relates a very remarkable case. The patient, aged forty-five, presented himself at Dr. Martin's clinic about four years ago. He complained then of violent pains in the left eye, radiating towards the temple and frontal region, photophobia, lachrymation, etc. His medical attendant had treated him with antiphlogistics, etc., for some weeks, and put down the affection as due to a rheumatismal diathesis. The patient stated that for a long time he had been taken suddenly every year, in spring and autumn, without apparent cause, in the same way, with frightful pain, which obliged him to keep his room for a month, and undergo severe treatment. Surprised at this account, Dr. Martin examined the eye carefully, and, in spite of acute symptoms of iritis, employed oblique illumination. "This examination demonstrated the existence of a small blackish pyriform body about the thickness of the head of a pin, with its base on the crystalline and inferior and external border of the pupil; it manifestly projected at one point. The cornea was perfectly healthy, and presented no trace of an old wound. The little tumour in no respect resembled a tumour of the iris. I immediately thought of a foreign body, and informed the patient of the result of my examination and my diagnosis. I could not convince him for some time, and it was not until he had exercised his memory that he remembered that his first ocular trouble followed a blow received in the workshop (marble works). He told me then that fourteen years previously he had been obliged to remain in a dark room, and that every year since that time he had had these internal ocular inflammations. The patient, now convinced, wished to be relieved. The only indication was to remove the foreign body; to this he consented, and the operation was performed the same day." The cornea having been punctured at its inferior external border with a large lance-shaped knife, the aqueous humour was allowed to flow slowly out, for fear of the foreign body disappearing behind the iris. The forceps was then introduced into the anterior chamber, and the hard and black body, which consisted of a triangular fragment of marble, was easily seized. A slight protrusion of the iris occurring, the operation was completed by the excision of the protruded portion. The sequelæ were simple, the pains disappeared the same day, and at the end of a week the patient left perfectly cured.

For five years the eye has been well, and vision completely preserved.—*London Med. Record*, Dec. 15, 1876.

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Treatment of Dilatation of the Lachrymal Sac by Injection of Perchloride of Iron.

Dr. SPAMPINATI (*Movimento Medico-Chirurgico* of March 7, and *Annali Universali*, August), in cases of narrowing of the nasal duct with dilation of the lachrymal sac, follows the process which he has seen employed by Del Ponte, namely, puncture of the sac and dilatation with a lead or catgut sound. Spampinati endeavours to obtain contraction of the lachrymal sac by injecting perchloride of iron. A lady had a soft lachrymal tumour of the size of a small nut. On pressure, mucus mixed with tears escaped through the puncta lachrymalia. The skin covering it was of unusual colour. Having opened the lachrymal sac, he ascertained that the nasal duct was obstructed by fungous growths. He applied probes dipped in a solution of crystallized nitrate of silver in water (0.75 per cent.). After four months there was marked improvement, but the lachrymation continued, and the tears collected in the dilated sac. Spampinati then determined to inject with an Anel's syringe solution of perchloride of iron mixed with two parts of water, removing the liquid by the syringe after a few minutes. After the applications the lachrymation disappeared, and neither mucus nor tears collected in the sac. The same result was obtained

in another patient. In both the effect was permanent, the disease not having reappeared in the first patient a year, and in the other six or seven months, after the treatment. The injections were used every day, the liquid being allowed to remain in the sac five or six minutes, and then removed by means of the syringe.—*London Med. Record*, Dec. 15, 1876.

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On the Treatment of Chronic Purulent Catarrh of the Middle Ear.

After a long experience of the various astringents used in chronic purulent otorrhœa, Prof. POLITZER gives, in a short paper in the *Archiv für Ohrenheilkunde* for April, his opinion on their comparative efficacy. Happily, he gives a decided opinion, and it is in favour of powdered alum and nitrate of silver. His method of applying these is as follows: The ear having been cleared of secretion by Politzer's method, or by the catheter, ten to fifteen drops of a nitrate of silver solution, of a strength of one of nitrate to ten of water, are passed into the ear, the patient inclining his head so that the fluid gravitates into the cavity. After it has remained there from one to two minutes, the surplus is washed out with lukewarm water. This is repeated daily eight or ten times; and, should the otorrhœa not then have ceased, powdered alum is blown into the ear by means of a quill or catheter, care being taken that it reaches the drum and lining membrane of the middle ear. This is left two or three days, and then examined. Should the alum be then lying dry on the membranes it is not disturbed, but allowed to break down and fall out of itself. Should it be found moist and mixed with secretion, it is washed carefully out, the parts thoroughly dried, and nothing done for twenty-four hours. If secretion then exist, alum is again introduced and treated as before.

[This method has been often used in England since Dr. Politzer proposed it in 1868, and with good results. The use, however, of such concentrated solutions of nitrate of silver is not always safe, and consequences arise which are distressing both to patient and to practitioner. The application of the powdered alum is followed in some cases by an irritable affection of the skin of the meatus. These results can be avoided by limiting the use of the silver solution to the parts to which it is desired to apply it, by soaking some absorbing material in the solution, fastening it on a probe, and so applying it, and by limiting the application of the alum to the affected membranes. These minutiæ of application can be carried out in private practice, but not in a large hospital clinique.]—*London Med. Record*, Dec. 15, 1876.

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On the Influence which the Position of the Head has on the Intensity of a Current of Air driven into the Eustachian Tube.

The July number of the *Monatsschrift für Ohrenheilkunde* contains a paper on the above subject by Dr. URBANTSCHITSCH of Vienna. He finds that in several cases Politzer's method was effectual only when the patient's head was inclined to one or other shoulder. Manometrical observations gave the same result. When a manometer was attached to each meatus, and a current of air driven into the naso-pharyngeal space, the action of the column of fluid was equal in both manometers, the head being erect; but on inclining the head to a side, it was often found that the fluid in the manometer attached to the ear which was uppermost was more affected than that in the ear pointing downwards.

To determine if the cause of this could arise from some change in the nasal spaces, he constructed a wooden model of these, and by experiments with this model concluded that the position of the head had no influence on the current as it passed through them. He concludes, therefore, that the position of the head acts on the opposition which the mouth of Eustachian tube offers to the rush of air against it. He believes that there is an increased action of the tube-moving apparatus on the uppermost tube, whereby the opening of the tube is more favoured, and therefore a decreased opposition to the entrance of air, when the head is inclined to the side; while the muscular structure of the other tube is unaffected.—*London Med. Record*, Dec. 15, 1876.

Changes in the Labyrinth in Infectious Diseases.

In the *Archives of Ophthalmology and Otology* for August, 1876, is a paper by Dr. Moos, of Heidelberg, on the changes in the labyrinth accompanying infectious diseases. The author commences with some remarks on the literature of the subject, and then gives full reports of six cases of typhoid fever, in four of which *post-mortem* examination revealed changes in the labyrinth. Dr. Moos finds as the result of microscopical examination, that in ileo-typhus the entire labyrinth is very often affected on both sides. Any portion may be attacked. The parts which suffered in all the cases were the utricle, saccule, ampulla, and lamina spiralis membranacea. The parts exceptionally involved were the semicircular canals and the zona ossea. The parts most essential to good hearing were regularly affected. Whether there exists any connection between this and certain peculiarities in the normal distribution of blood-vessels Dr. Moos cannot at present decide. Histologically the affection consists of an infiltration of lymphoid cells or an infiltration of small cells. With the exception of one case in which fat granule-cells were found besides the small cells, with the same anatomical distribution and in almost equal abundance, the latter was the only and the constant new formation.

Before interpreting these facts, Dr. Moos narrates some more cases, two of total deafness after typhoid fever, one of inflammation of the labyrinth after scarlatina, and one of purulent inflammation of the labyrinth in variola. The author then considers the question whether in the pathological changes found in the labyrinth of typhoid patients we have to do with merely a state of irritation (an inflammation), or whether there is a special new formation peculiar to typhoid. In support of the view that there is a new formation special to typhoid, the following reasons are adduced. In the first place the affection occupied both sides uniformly, even in one case where it was impossible to speak of any transference of the morbid process from the middle to the inner ear. Besides, we ought to consider the resemblance borne by these processes to changes occurring in other organs during typhoid fever, such as have been observed not only in the glands of the intestinal mucous membrane, and in the mesentery, but also in the liver, the kidneys, and in the peritoneum by Wagner, Friedrich, and others.

In four of the cases in which a purulent inflammation of the tympanic cavity also existed, it might be assumed that the inflammation was simply propagated from the tympanic cavity through the wall of the labyrinth to the cutaneous labyrinth, especially as the membranous tissues of the vestibule lying next to the tympanic cavity were often the most seriously affected (even the periosteum of the vestibule being attacked in some cases), and besides, the changes in the labyrinth did not differ in any respect from those of the first stage of inflammation.

In the case of scarlatina, the state of the labyrinth could be accounted for in like manner.

Clinical reasons support the view of the transplantation of the inflammation from the tympanic cavity. If, however, the inflammation of the labyrinth be regarded as propagated from the tympanic cavity, it may still be possible that the tympanic affection stands in a relation of cause and effect to the typhoid process. Catarrhal affections of the mucous membranes in general are not rare in typhoid fever. Having stated the possible modes of explanation, and pointed out the fact that inflammation in the labyrinth is common in typhoid, Dr. Moos leaves for future decision the question whether in such cases we have or have not to do with a specific typhoid process, and concludes his interesting and suggestive paper by describing the various possible modes of termination of the affection of the labyrinth. If this affection be an inflammatory irritation, the latter may increase in its course to a purulent inflammation; or a fatty breaking down and complete resorption of exudation may occur; the latter may be the case even when we have a typhoid new formation, or there are opacities, thickenings, or atrophy of the affected tissues; or, as in the intestinal follicles and the mesenteric glands in typhoid fever, there may be necrosis or ulceration.

In applying these various possible results to those disturbances of hearing accompanying typhoid, which offer only negative symptoms during life, we may expect to find: 1. Gradual and spontaneous disappearance of functional disturbance of hearing; or, 2. Persistence of some degree of deafness, with or without subjective noises; or, 3. Complete unilateral or bilateral disturbance of function.—*London Med. Record*, Dec. 15, 1876.

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On the Connection between Epileptiform Phenomena and Diseases of the Ear.

In the *Archives for Ophthalmology and Otology* for 1876 is the report of a lecture by Dr. Moos on the above subject, translated by Dr. Burnett, of Philadelphia. He considers that the diseases of the brain and its appendices, which occur as complications in diseases of the organ of hearing, may be divided into two groups, viz. (1) those diseases which are to be regarded as the result of a direct passage to it of an inflammatory process; (2) those diseases which, according to the present status of nerve-pathology, we are compelled to believe to arise by being centripetally conveyed from the seat of irritation, and produce processes in the brain which are manifested again peripherically. The latter are the affections of which Dr. Moos speaks in this paper, and to them he applies the term reflex neuroses. These reflex neuroses consist of attacks of sneezing, coughing, vomiting, epilepsy, hemiplegia, and psychoses. After giving a short review of the literature of the subject, he gives an account of a case of reflex epilepsy observed by him lately. A boy, eight years old, was brought to the aural clinique on account of frequent attacks of earache, discharge, and deafness. Between these attacks of earache the patient had attacks of unconsciousness, ushered in regularly by "great sleepiness and great diminution of hearing, and sometimes vertigo, headache, and palpitation of the heart." These attacks of unconsciousness lasted from two to three hours, during which the patient did not fall, and had no convulsions, but remained unconscious and speechless, his gaze being fixed. The still greater diminution of hearing was so marked in the later stage of the disease, that when it occurred the relatives of the child predicted one of the attacks just described with invariable certainty. The attacks disappeared with vomiting, and then consciousness returned. The objective examination gave the following: On both sides the membranæ tympanorum were considerably drawn in, and they appeared tightly stretched over the promontory. The short process of the hammer, and the posterior fold of the membrana tympani, were sharply prominent, and the manubrium appeared perspectively foreshortened. These symptoms were caused by an excessive catarrhal disease of the nares and naso-pharyngeal space. This being treated in the usual method, and inflation of the tympanic cavities being effected by Politzer's method, and by paracentesis, all the reflex symptoms passed off, and no epileptiform attack had occurred since the commencement of the treatment till the patient was last seen, nearly a year afterwards. No other treatment was adopted, and Dr. Moos thinks that in this case the *post hoc* must be admitted to be *propter*.—*London Med. Record*, Dec. 15, 1876.

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A New Method of Rhinoscopy.

Professor Voltolini, of Breslau, describes, in the *Monatsschrift für Ohrenheilkunde* for August, a method by which the floors of the nasal cavities and the pharyngeal orifices of the Eustachian tubes may be examined. These regions are, in favourable cases, seen by the methods already in use; but it is only in exceptional cases that even one well practised in rhinoscopy gets a view of them. The method which Voltolini proposes is simple. The patient places and keeps his tongue in the position required, and the uvula is also set aside by any of the usual methods. The surgeon employs two separate laryngeal mirrors, their sizes corresponding to the pharyngeal space about to be examined. The first mirror introduced must have a longer handle than the usual laryngeal mirror, and be capable of being bent as desirable. A slight

curve is given to it at the part next the handle, so that it passes over the tongue easily; and at the part which reaches the posterior pharyngeal wall it is bent to a right angle. The mirror at the end is passed upwards to the basis cranii, and so placed opposite the posterior nasal orifices. The second mirror is the usual laryngeal mirror, the back of which is pressed against the handle of the other where it first ascends into the pharyngeal space. Light is thrown upon the shorter mirror, which reflects it to the longer, which again reflects it to the spot to be examined, an image of which is returned in the same way.—*Lond. Med. Record*, Dec. 15, 1876.

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Inguinal Adenitis Simulating Strangulated Femoral Hernia.

Dr. CRUSSARD, of Neufchâteau, reports in the *Revue Médicale de l'Est*, No. 5, 1876, a case of acute inguinal adenitis, complicated by symptoms of intestinal strangulation. That difficulty might occur in distinguishing between an inflamed inguinal gland and a strangulated hernia was recognized by Boyer and Nélaton, who, allowing that constipation and vomiting were very rare symptoms in association with adenitis, took care to point out that, when these complications were present, certainty in diagnosis often became impossible. The author has brought forward his case for the purpose of throwing some light upon this difficult point in practical surgery.. The question discussed by the author, in some remarks on his case, is thus stated: "There being given a tumour in the fold of the groin, which has existed for several days, presents all the signs of an inflamed femoral hernia, and is accompanied by the characteristic symptoms of strangulation—the subject of this tumour having long suffered from hernia in the same region—to determine whether the tumour be a strangulated hernia or simply an inflamed gland." In considering this important question, the surgeon may be best guided by his previous knowledge of the tumour or, failing this, by the patient's own report as to its previous form, size, and consistency. In the absence of any report as to the former condition of the swelling, the diagnostic difficulty will, the author thinks, always remain very great. This communication contains the following general conclusions. 1. Inguinal adenitis may, in certain instances, simulate strangulated femoral hernia. 2. The diagnosis is simple if the patient have a recent hernia, and be seen in good time; unnecessary if the surgeon be not called in before the development of manifest fluctuation which demands the same operation; of great importance and attended with much difficulty if the patient has long been ruptured in this region, and the surgeon be not called in until a period when the nature of the tumour can no longer be made out on examination. 3. In a case of this kind, some knowledge as to the former condition of the region affected will be of great service to the surgeon; this alone may excite his suspicions, and even enable him to form a certain diagnosis. 4. There are cases, however, in which little or no information can be obtained, and here the surgeon would conceive no suspicion were he not aware of the possibility of error. 5. In the presence of these sources of doubt, it is to treatment that one must have recourse, in order to attain certainty; it is thus one may learn the true nature of the symptoms. A free application of leeches will rapidly put an end to the sympathetic symptoms set up by an inflammation, and which simulate strangulation. In case of true strangulation this plan would not be disadvantageous. In any case, it need not lead the surgeon to delay too long in having recourse to an operation, should the strangulation persist or increase in severity.—*London Med. Record*, Dec. 15, 1876.

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Compression in Acute Orchitis.

In a recent clinical lecture on a well-marked case of acute blenorrhagic orchitis, Prof. THIRY observed (*Presse Méd. Belge*, No. 5) that, notwithstanding its origin, this must be looked upon as a case of simple acute inflammation, which it would seem rational and logical to treat by local bleeding, emollients, fomentations, and the like. But in point of fact we are in possession of a

means of treatment far more powerful than this, viz., compression, which is too much lost sight of in favour of new modes of treatment which succeed each other day after day, and yet are devoid of the constant efficacy and the promptitude of action which characterize methodical compression. It may be objected that compression is resorted to, but is reserved for chronic cases, as it would be imprudent to employ it in those of an acute character. But here compression is of little importance, and may be contraindicated, while it is in acute and intense orchitis that its true triumphs are gained. The sufferings of the present patient are of exceptional severity, but that will not prevent his pains disappearing as if by enchantment solely under the use of a compressing bandage. The orchitis will, indeed, subside with rapidity proportionate to its acuteness, and a week will not be required to effect a cure. Nay, did circumstances require it, this patient might be enabled within forty-eight hours, if not sooner, to resume his occupation. But this success can only be attained by the effectual application of the compressive bandage; and this will be easily accomplished if we bear in mind the objects we should have in view in effecting it. These are: (1) benumbing the local nervous sensibility, the general excessive sensibility becoming spontaneously calmed, as seen immediately after the application; (2) diminishing the afflux of arterial blood into the affected organ, by approximating the vascular parietes—the arterial afflux being always in direct proportion to the intensity of the pain; (3) repelling the venous blood and the products of exudation towards the centre of circulation; and (4) the immobilization of the testis, and its protection from external agents.

In the present case there is a complication which many have considered as contraindicating the employment of compression, viz., an excessively painful *engorgement* of the spermatic vessels of the cord. But fortunately this is not the case, for the cord may be compressed at the same time as the testis, it only being necessary to combine a compressive spica bandage of the groin with the testicular bandage, so as to exert a uniform and simultaneous compression of the whole. In all the cases in which this practice has been resorted to, success has been most prompt and most decisive.

Methodical compression of the testis by means of the starch bandage was applied, combined with a spica of the groin enveloping almost all the abdomen, and acting directly on the cord by means of graduated compresses. The patient was then placed in a horizontal position, his head only being raised, and a pill was prescribed every three hours in aid of the anæsthetic effect of the bandage, composed of small doses of bromide of potassium and opium. Scarcely had the bandage been applied, when the patient, who had suffered much during its application, became entirely calm, and declared that he no longer felt any pain whatever. He enjoyed his first good night; and on the bandage being removed, on the second day, not only did all pain continue absent, but the swelling had much diminished and the redness had disappeared. The bandage was reapplied without causing any pain, and the patient was still kept in the horizontal position. On the fifth day a suspensory bandage was substituted for the compression, and four days later he was discharged, radically cured. Results of this treatment of a precisely similar character have been obtained by Prof. Thiry at the St. Pierre Hospital, Brussels, during the last thirty years—compression having been the sole measure directed against acute orchitis the consequence of urethritis, whatever has been the intensity of the phlegmasia, and that whether it has been simple, or complicated with fever, *engorgement* of the cord, or inflammation of the tunica vaginalis and scrotum. Prof. Thiry has made comparative trials of the various new modes of treatment that have been from time to time in vogue; but he has invariably come to the conclusion that compression is the most efficacious, the most simple, and the most expeditious procedure.—*Medical Times and Gazette*, Nov. 18, 1876.

Lithoclysmy; a New Operation for Vesical Calculus.

Dr. PIGNONI has designed (*Le Mouvement Médical*, Nov. 18, 1876) an instrument by means of which he proposes to disintegrate and dissolve calculi while still in the bladder. He has found by experiment that nitric acid diluted with half its weight of water will rapidly disintegrate all forms of calculi, even those which contain cholestearine, the best solvent for which, however, is alcohol. Neither of these reagents exerts any destructive influence on caoutchouc. In order, then, to destroy a stone while still in the bladder, it is only necessary to introduce a long caoutchouc bag into the bladder, to isolate the stone within this bag, to bring its open end out of the meatus urinarius, and to cause a double current of diluted nitric acid or of pure alcohol, if the calculus be composed exclusively of cholestearine, to pass through the bag. All this may be safely done with Dr. Pignoni's apparatus. It consists, first of all, of a straight tube, 7½ inches long, and open at both ends, through which a gum-elastic bougie passes. This is introduced into the bladder, and then the bougie is withdrawn, leaving the tube *in situ*. The bladder is then filled with warm water, and the isolating sound introduced. This sound consists of a long metallic stem, to one end of which a flexible, elastic steel hoop is attached. The open end of a caoutchouc bag is fastened to the hoop, which is then compressed with the fingers and pushed into and through the canula. Upon entering the bladder the hoop resumes its original form, and by careful manipulation the stone, provided it be not incapsulated, may be seized and imprisoned in the sac. The whole of the caoutchouc bag is then pushed into the bladder and the isolating sound withdrawn, bringing with it the open end of the bag, and leaving the closed end in the bladder enveloping the stone. The interior of the bag is greased, and three or four tapes are glued to it longitudinally to keep it from embracing the stone too tightly. The reagent is introduced through a gold or platinum double current catheter. If the stone be of moderate size it can be dissolved in a single seance; but if it be too large for that, the solvent should be evacuated, and the bag washed out with common water, and then split open.

An extensive experience with the operation has convinced Dr. Pignoni that the increased temperature caused by the action of the solvent upon the stone, does no harm. Spontaneous rupture of the bag is impossible. Even if it should occur, however, little harm could result, for the bag being almost completely filled by the stone, the amount of chemical solvent contained in it would be small in comparison with the pint or more of water it would meet in the bladder.

The action of a voltaic current of electricity, a powerful agent for decomposing calculi, might also be employed in addition to the chemical solvents. When stricture of the urethra or an enlarged prostate interferes with the operation per urethram, lithoclysmy may be performed through the perineum or the rectum, or through the hypogastrium, in preference to lithotomy or lithotrity.—*Med. Record*, Jan. 20, 1877.

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Vesico-Intestinal Fistula, Lumbo-Colotomy.

Dr. ROBERT WEIR, at a late meeting of the New York Pathological Society (*Med. Record*, Jan. 20, 1877), presented a specimen of vesico-intestinal fistula, for the relief of which, left lumbo-colotomy had been performed. The patient, aged 43 years, was an ice-dealer who had enjoyed good health until June last, when he experienced difficulty in urination. The history which he gave of the trouble, suggested the possibility of traumatic origin. In 1862, while descending a ladder, he straddled one of the rounds, injuring his perineum, and subsequently passed bloody urine. Shortly afterwards a stricture of the urethra was developed, and the operation of external urethrotomy was performed by the late Dr. Krackowizer. He was told that in order to secure the patency of the canal, it was necessary to use an instrument at stated intervals. This he did for a time, and then as usual neglected himself. There was a strong sus-

picion, from the colour of the urine, its fecal odour, and the solid matter discharged, that a fistula existed, communicating with the large intestine; but there was a great deal of difficulty in diagnosticating its precise position. Recollecting a case presented by Dr. Krackowizer, in which the existence of such a communication was made out by the injection of ink into the bladder, and its reappearance in the rectum, Dr. Weir determined to resort to a similar expedient. Not wishing to employ ink, in consequence of existing irritation in the bladder. he chose milk. Accordingly, two or three pints of milk were injected into the bladder, while a speculum was placed in the rectum. The experiment, however, was unsatisfactory, as the co-operative expulsive efforts of the patient had been suspended by the etherization resorted to.

By the bimanual examination a tumour was, however, discovered in the left iliac region, and was suspected to involve the upper part of the rectum. The following day milk was again injected into the bladder without the use of an anæsthetic, and was expelled per rectum in a very few moments.

The diagnosis being then reasonably clear that the opening was situated in the descending colon or rectum, the operation of left lumbo-colotomy was performed, Aug. 30, by Bryant's oblique incision.

The man did very well after the operation; his bladder symptoms were markedly relieved, and his intervals of urination lengthened out. Fecal masses would, however, in the last weeks of his life, escape into the bladder during the night time. He died with symptoms of phthisis, Nov. 14. At the autopsy there were found tuberculous ulcerations in the small intestines, and some in the large intestine. The small intestines were matted together in the pelvis, and with the thickened adhesions constituted the tumour felt during life. The opening into the bladder, which had an irregular communication with the upper part of the rectum, was capable of admitting the end of the finger.

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Treatment of Fracture of the Patella by a New Method.

Dr. Henry O. Marcy describes, in the *Boston Medical and Surgical Journal* for Dec. 7, 1876, a new method of treating fracture of the patella.

A careful study of the pathological processes has led Dr. Marcy to the deduction of the following rules for treatment.

"The first, and as I believe one of the most important factors of all, is the effusion. This, if in large quantity, or if not rapidly absorbed, from my experience in aspiration in acute synovitis of idiopathic character, I would unhesitatingly remove by the aspirator, and repeat the operation if necessary. The fracture cannot be treated in permanent apparatus until after the effusion has disappeared, but rest on pillows, cold applications locally, etc., answer very well. I have in several instances placed the limb in Hamilton's splint for the first week.

"As soon as the traumatic inflammation has subsided, I have used in the last three cases the following, which so far as known to me is a new method of treatment.

"Adhesive plaster of good quality, upon strong cloth (I have found that of Maw & Sons, of London, prepared upon thick cloth, the best), cut in pieces of concentric shape, of considerable width, should be carefully adjusted both above and below the patella. The inner edges are best turned slightly back upon themselves, or welted over a small cord, while the projecting points are doubled back for reinforcement as well as to prevent their adhesion to the skin. These pieces are perforated for the introduction of an elastic cord.

"The limb is carefully enveloped in a plaster bandage extending from the toes to the hip, and strengthened by inlaid pieces of tin. The same precautions are required in the application of the bandage as in fracture of the thigh, to secure rest and support, as well as disablement of the muscles. The best proof of its proper application is that the limb is perfectly comfortable, and at the same time voluntary muscular contraction is reduced to the minimum.

"Tins are incorporated into the bandage each side of the knee, of suitable shape to reinforce the fenestra, which is at once cut in the bandage, of oval

shape and sufficiently large to liberate the entire patella, with a free surrounding of nearly an inch. Loops of wire (one or better two on each side, above and below the knee) are also adjusted in the bandage at suitable distances for the tying of the elastic ligatures fixed in the extremities of the adhesive plaster. The proper position of these loops is of some importance; for if placed too low, the pressure is too great from above downward, which results, as in the figure of eight bandage, in tilting forward of the fragments, thus causing the fractured surfaces to approach each other at a greater or less angle.

"Pressure is made upon the fragments by the adjustment of the cords. Much less force is required than would be supposed, the lower piece of plaster fixing the lower fragment, while the upper draws its fellow into apposition. The inclosed surface over the patella is easily rendered œdematous by interference with the capillary circulation, if too much tension is used.

"The patient may be at once allowed to walk with crutches, the foot being supported by a sling from the neck, as in fracture of the thigh. After the first week he may ride, and, in fact, attend to any light duties."

Dr. Marcy desires not to claim too much for the above method. It has the advantage of being simple, keeps the injured parts open to inspection, saves the patient the irksome suffering of weeks in a constrained position, and maintains his general health by exercise and ability to be out of doors, which last is no minor factor in hastening the reparative processes. In the hands of any physician of moderate mechanical genius it can scarcely fail of securing satisfactory results. As in cases treated by any other method, care should be exercised for a considerable period after the removal of the splint not to bring the limb into too free use, for not rarely will the tendon itself lengthen after several weeks have elapsed, and what appeared to be a good result, months later makes a different exhibit. This is illustrated by the case of a physician in Cambridge, who remained on his back for months in order to be certain of a good result, but the tendon gradually lengthened for some months, until now it measures about two inches.

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A Rare Injury of the Ankle-joint.

Dr. von Patruban describes this case. A strong well-nourished woman, aged forty-five, was removing an iron stove, and in descending a ladder with her burden, caught her foot between two bars. When she regained consciousness, she observed a wound two inches and three-fourths long on the dorsum of her right foot. The surgeon who was called in sent for Dr. von Patruban, who, on removing the coagula, found the body of the astragalus lying detached, and removed it. The foot was dislocated outwards. The displacement was reduced, and the wound cleaned and dressed, the foot being put up in an elevated position. At the end of six weeks, the woman had good use of the foot. Dr. Dumreicher related two cases of complicated dislocation. A woman, while on a ladder, slipped, and fell from a height of about three feet, on the outer side of her foot. On the inner side of the foot there was a lacerated wound, in which lay the astragalus, connected only by thin fibres with the rest of the foot. The bone was removed, and the limb put up in a Petit's boot; recovery took place in four weeks. The second case was that of a man who, in descending from a wagon, came down on the outer side of his foot, which was dislocated, and could not be replaced. When he was seen, some days after the injury, there was considerable swelling, with sloughing of the dorsum; a comminuted fracture of the astragalus was detected by means of a probe. Five pieces were removed, and recovery took place in five weeks.—*London Med. Record*, Dec. 15, 1876.

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On Dorsal Dislocation of the Thumb.

Dr. H. Waitz, of Kiel, reports in the *Berliner Klinische Wochenschrift*, No. 44, 1876, two cases of dislocation of the thumb treated by Esmarch, and advocates, as a means of favouring reduction in very obstinate forms, exposure of the joint by an incision. Through such a proceeding the surgeon may be

able to discover the obstacle to reduction, and to remove it. For the success of the operation, the application of Esmarch's apparatus for rendering parts bloodless is necessary, and the dangers of exposure of the joint must be avoided by the use of Lister's spray and antiseptic dressings. The subject of the first reported case was a man aged twenty-nine years, who applied to Esmarch with a recent dorsal dislocation of the left thumb, complicated by a transverse gaping wound in front of the injured joint. Attempts to effect reduction by manipulation having failed, the thumb was rendered bloodless, and the injured parts closely examined through the wound. The tendon of the long flexor of the thumb was quite loose, and could not have prevented reduction. The capsule of the joint had been partly lacerated, and the neck of the metacarpal bone was closely surrounded by a "button-hole" slit in this membrane. The opposite margins of this slit having been first incised and afterwards held apart by small blunt hooks, the phalanx could at once be readily pulled to its normal position. The wound was washed out with a weak solution of carbolic acid and dressed antiseptically. Healing took place without signs of any local reaction, and on the fourteenth day the mobility and proper functions of the thumb had been restored. This case, the author states, presented two points of interest. An examination of the interior of the injured joint had led to a removal of the obstacle to reduction, which would otherwise have proved insuperable. The healing process was carried on rapidly and without reaction, and the mobility of the thumb was quite restored, in consequence, it is assumed, of the use of Lister's antiseptic dressings. A case of simple dislocation of the thumb is reported by the author, in order to show the good results of a new plan of treatment, suggested by the facts of the first case. Lucke, in a paper on dislocation of the thumb, had recommended in 1871, as a last resource when ordinary attempts at reduction had failed, incision into the joint, and direct removal of the obstacle. Dr. Waitz had not met with any record of a case in which this advice had been followed, but he held that it was perfectly justifiable to have recourse to such a plan of treatment, considering that the subsequent dangers could be much reduced, or even altogether avoided, by the application of antiseptic dressings. The subject of the case in which this treatment was carried out was a man, aged seventeen years, who came to Dr. Esmarch with a simple dorsal dislocation of the right thumb, caused ten days previously by a fall. All other attempts at reduction having failed, the injured thumb was rendered bloodless, and a transverse incision made in front over the prominent head of the metacarpal bone. The capsule, as in the former case, was found to have been torn, and the neck of the metacarpal bone was closely gripped by the slit. Incision and separation of the margins of this slit did not, however, help reduction, which, after closer examination, was found to be prevented by interposition of the tendon of the long flexor muscle between the head of the metacarpal bone and the base of the first phalanx. This tendon having been raised by means of a small blunt hook, reduction was easily effected. The operation was performed whilst the injured part was under the carbolic acid spray, and Lister's dressings were subsequently applied. The wound healed rapidly, and one month after the operation the patient had good use of his right thumb.

The difficulty in effecting reduction in the first case was due to a "button-hole" laceration of the capsule, which girt the neck of the metacarpal bone so closely that a release of this bone could not take place without an artificial enlarging of the slit. This condition is produced, according to Petersen, by the following mechanism: when the margins of the slit have arrived at the back of the head of the metacarpal bone, contraction takes place of the muscles connected with the adjacent sesamoid bones, viz., the adductor and the ulnar insertion of the short flexor on the one hand, and the abductor and the radial head of the short flexor on the other hand. The margins of the slit are thus drawn well over the head of the bone, and an almost complete interposition is brought about of the capsule between the metacarpal bone and the base of the first phalanx. This condition, by reason of the elasticity of the muscles, cannot readily be removed even on the administration of chloroform. In Dr. Esmarch's case the head of the metacarpal bone was set free

after incision into the joint, but the margins of the slit in the capsule encircled the bone so closely that it was necessary not only to cut the margins of the slit, but also to separate them further by means of blunt hooks. Reduction in the second case was hindered through interposition of the tendon of the long flexor of the thumb. This condition has been thus explained by Spitzer: the tendon of the long flexor being closely bound down to the first phalanx of the thumb, by means of tough fibrous tissue, must be carried along with this bone in any direction that it may be forced. In dislocation, the tendon, according to Spitzer, is always thus carried away; when there is but slight displacement of the phalanx, it lies alongside of the head of the metacarpal bone; when the displacement is considerable it becomes interposed between the head of the metacarpal bone and the base of the first phalanx. Waitz does not accept this view, and is disposed to think that displacement of the tendon of the long flexor in connection with dislocation of the phalanx, occurs in those cases only where the injury has been caused by a fall or blow on the inner surface of the thumb. In the former of the above reported cases, the tendon of the long flexor was seen in its normal position over the middle of the head and neck of the metacarpal bone. In conclusion, it is stated that where dorsal dislocation of the thumb cannot be reduced through ordinary means, in consequence of interposition of capsular ligament, or of the tendon of the long flexor, an incision into the joint, and direct removal of the obstruction, is preferable to any other operative treatment, provided that antiseptic dressings be used.—*London Med. Record*, Dec. 15, 1876.

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Dislocation of the Hip reduced by the use of the Fulcrum.

Dr. J. H. Pooley, Prof. of Surgery in Starling Medical College, Columbus, Ohio, reports (*Am. Practitioner*, Dec. 1876) an instructive case of dislocation of the hip reduced by the fulcrum. In the April and September numbers of the *American Practitioner* for 1876, he says: "I was very much interested in two short communications by Dr. George Sutton, Aurora, Ind., on the use of the fulcrum in the reduction of dislocations of the hip. The principle there advocated struck me as being sound and rational, as well as exceedingly simple, and the illustrative cases seemed very convincing. I determined upon the first opportunity that should occur to put it to the test of actual trial, and having done so I am more than ever convinced that it is a most valuable addition to our resources in dealing with this sometimes very troublesome class of injuries. And as every actual trial of a new expedient in surgery is of value in settling the usefulness of the proposed improvement, and as I feel it to be due both to the profession and to Dr. Sutton, that, for a time at least, all the cases in which his method is employed should be recorded, I publish the following account of my case:—

"October 19, 1876, I was requested by Dr. A. Dunlap, of Springfield, Ohio, to see, in consultation with him, a case of dislocation of the hip, in which he had failed to effect reduction after a fair and repeated trial of the ordinary method of manipulation. The patient, the wife of a farmer residing near Catawba, Clarke County, Ohio, about fifteen miles from Springfield, had been thrown from a wagon the day before (October 18th), about four o'clock in the afternoon, and sustained a dislocation of the left hip. She had been first seen by Dr. John Clark, of Mechanicsburg, who had been unsuccessful in his attempts at reduction. Dr. Dunlap had then been sent for, and had made repeated attempts to reduce the hip, but also without success. All these attempts had been by manipulation; pulleys had not been used.

"I arrived at the house early on the morning of the 20th, about three o'clock. I found the patient (a spare, nervous woman of thirty-three) in bed, suffering considerably from pain, and severely from nausea, the result of chloroform which had been administered on several occasions.

"The left limb was an inch and a half shorter than its fellow, the foot very slightly everted, and the head of the bone could be plainly felt in front of the ilium, just above the acetabulum. Dr. Dunlap informed me that the dislocation

had been primarily on to the dorsum ilii, and the present position of the head of the femur was the result of the last manipulation. It had been found, on manipulating it, to be extraordinarily movable, and had been carried once or twice into the thyroid foramen, and also up on the ilium just above the acetabulum, in which situation I found it. In fact it would go almost anywhere except into the right place. Dr. Dunlap said that he had carried it right across the acetabulum on two occasions, and as he did so, he felt a distinct crushing crepitus, but it went over, and not in. His belief, which I presume was correct, was that a portion of the lip of the acetabulum was broken off, and as the head of the thigh-bone was brought up against this broken portion, it was forced before it, and partially filling up the acetabular depression, prevented it from going in, and guided it over on to the other side instead.

"I directed, according to Dr. Sutton's plan, a firm cylinder to be made, by tightly and evenly rolling two sheets, which was three inches in diameter, and about two feet in length; it was firmly tied round with narrow strips of bandage to prevent it unrolling. The patient was now anæsthetized with a mixture of alcohol, chloroform, and ether, and laid upon a firm, narrow mattress, laid upon the floor. The cylinder, prepared as described, was now placed across the upper part of the thigh in the groin, and firmly held at each end by an assistant; over this, as a fulcrum, Dr. Dunlap made the manipulations, while I attempted to follow the excursions of the bone with my fingers. Drs. Clark and Newcomb, of Mechanicsburg, Drs. Beach and Hunter, of Catawba, and Dr. C. W. Dunlap, were also present and assisting. The first two attempts failed, as I very plainly saw, from not fully carrying out the principle involved in the use of the fulcrum; that is, by abducting the knee before complete flexion of the thigh over the cylinder had been accomplished. The first time the head of the femur lodged in the thyroid foramen; the second time at the top of the ilium, where it was when we began; it had skirted round the base of the acetabulum, without rising to its level, much less going into it.

"The third trial, in which the principle of the fulcrum was deliberately and thoroughly carried out, was perfectly and speedily successful. The thigh was slowly and fully flexed on to the abdomen over the fulcrum, the head of the bone was lifted up to a level with the acetabulum, and when the knee was abducted, and the motion of bringing the thigh down barely commenced, it slipped in with a distinct snap; the limb was found to be restored in length and position, and the dislocation was reduced. A broad, firm, pelvic bandage was applied, and the patient returned to bed.

"This may almost be looked upon as a test case for the new method. Ordinary manipulation had been tried by skilful hands, in which it had never before failed; and I think that there can be little doubt that Dr. Dunlap's explanation of his failure was the correct one. What was wanted then was some means by which the head of the femur could be carried up to a level with the top of the acetabulum, and thus prevented from pushing the broken acetabular rim before it; this was found in Dr. Sutton's method, the obstacle was overcome, and the reduction accomplished.

"It seems to me, therefore, that we are indebted to Dr. Sutton for a valuable improvement; and I do not know a more beautiful and philosophical piece of practical surgery, than the reduction of a dislocated hip by Reid's manipulation performed over Sutton's fulcrum."

Excision of the Elbow-Joint.

Dr. H. H. A. Beach, surgeon to out-patients at the Massachusetts General Hospital, publishes (*Boston Med. and Surg. Journal*, Jan. 4, 1877) a report of a series of twenty-one cases of excision of the elbow-joint, operated on at the Massachusetts General Hospital by Dr. R. M. Hodges. This collection of cases, comprising all, fatal as well as successful, which have occurred in the hospital service of Dr. R. M. Hodges, during a period of ten years, is reported for the purpose of showing the ultimate and excellent results of excision of the elbow when recovery takes place, and the advantages of a single straight in-

cision in its performance. This method, largely avoiding the cross-cutting of any tissues, allows "the connection of the triceps extensor tendon, with the investing aponeurosis of the arm and forearm, to be preserved almost intact. An attachment for the muscle is thus retained which diminishes, to a certain extent, the loss of power following its unavoidable separation from the olecranon."[1] Transverse incision of the integuments, even though the above-mentioned connection is maintained, is in itself prejudicial to the subsequent motions of the limb, if the wound does not unite by first intention, but cicatrizes by granulation, as it almost invariably does.

Another cardinal point in this operation is the preservation of the attachment of the brachialis anticus muscle. It is commonly stated that this muscle is inserted into the coronoid process. No method of demonstration better displays the absolute fact in regard to this anatomical point than excision of the elbow on the dead subject, which, without dissection, makes plain that the attachment is into the shaft of the ulna and *base* of the coronoid process, abundant room being left between the process and the tendon for the passage of the saw (which should always be started on this side of the bone), and the removal of this portion of the ulna. Experience shows that the extent of fracture permitting an attempt to save the limb by excision seldom reaches a degree which prevents the carrying out of these rules; and it rarely happens that so much of the radius requires removal as to cause any interference with the insertion of the biceps. The great muscles of extension and flexion are thus left in a comparatively undisturbed condition. The amount of bone excised decides to some extent the subsequent mobility. Excision of the articulating surfaces alone would probably in most cases be followed by an anchylosis. Regret might sometimes be felt at not having excised enough, but seldom at having removed too much. The sacrifice should always be at the expense of the humerus, since the limit for the ulna and radius is fixed, as has been stated, by the necessity of preserving the brachialis anticus and biceps muscles. This method of operation, as Dr. Hodges informs me, was taught twenty-six years ago by Alphonse Guérin in his private course of instruction at Clamart. The *Eléments de Chirurgie* is, however, singularly deficient in details as regards excision of the elbow. A slight incision was proposed and practised by Parck, on the dead subject, in 1782, and is that followed in what is known as Langenbeck's operation. A claim of "originality" for the procedure by which "the aponeurotic structures passing from the arm to the forearm" are preserved has been made by Mr. Maunder, of London, so recently as 1873. The earliest operation of the accompanying series was in 1866. The details above alluded to were observed then and in all subsequent cases, except when modified by existing wounds. In all its steps, the method has been taught in the operative courses of the Harvard Medical School since 1855. If the operation thus performed still possesses novelty it will not detract from the usefulness of this report.[2]

The treatment pursued in these reported excisions is thus briefly stated. The wound was invariably closed with sutures. The arm, after the operation, was laid upon a pillow, flexed at an angle of 135°, that being the position most comfortable for the patient. Local inflammation, abscesses, pain, etc., were met by active measures based on general surgical principles. A generous diet was always allowed and encouraged. When the arm was in a state to permit of bandaging, an internal angular splint of tin, broader than usually adopted for fractures, and fitted as regards length to each individual case, was applied, and the patient allowed to get up and walk about, the wound being dressed without

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[1] Report of a Committee of the Associate Medical Members of the Sanitary Commission on the Subject of Excision of Joints for Traumatic Cause, 1862, page 11.

[2] Dr. H. J. Bigelow's plan for excising the elbow-joint has been suggested since these cases were operated on. The incision is similar to that described, but in removing the articular surfaces he preserves the internal condyles of the humerus. This secures additional chances of good pronation, supination, flexion, and extension, by saving the attachments of muscles having their origin at the condyles. Proceedings of the Boston Society for Medical Improvement: *Boston Medical and Surgical Journal*, March 30, 1876.

the removal of the splint. The time spent in the hospital was not great; one patient remained seventeen weeks, the other an average of about nine weeks. When discharged the splint was usually dispensed with, and a sling substituted. Passive motion was rarely practised beyond that which came from such use of the limb as patients could be persuaded to make, and a useful arm was seldom obtained before the end of a year from the time of excision.

In twenty-one cases where amputation must otherwise have been performed, this report exhibits fifteen arms preserved, several of them being useful to a remarkable degree, and all of them, except one, retained motion of the elbow, forearm, hand, and fingers. These excellent results suggest the inquiry whether this operation is not deserving of a broader application. A successful excision always leaves an arm more serviceable than one in which anchylosis has taken place after a bad fracture unaccompanied by a wound. Professor Busch, of Bonn, has twice excised with success the entire joint, for irreducible dislocation of the head of the radius, both pronation and supination being regained. A measure which of itself, in civil practice, so seldom occasions a fatal result, would seem more than merely justifiable in this seemingly trivial but thoroughly disabling accident, in which reduction is often impossible, or, if possible, so rare to maintain.

Excision of the elbow was first performed in the United States, in 1834, at the Massachusetts General Hospital, by the late Dr. John C. Warren, and although now very generally practised in certain classes of injury and diseases, it may still be doubted whether, in this brief period of forty years, the full range of usefulness has been reached which belongs to this invaluable operation.

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On the Treatment of Pseudarthrosis.

Dr. Becker, of Munich, in a communication to the *Aerztliches Intelligenz-Blatt*, No. 41, 1876, advocates, as a plan of treating ununited fracture, the subcutaneous injection into the false joint of a weak solution of carbolic acid. In the treatment of pseudarthrosis, it is necessary, the author points out, to establish such a degree of inflammatory action, that the limits of plastic exudation may not be overstepped, and that suppuration may not result. The usual therapeutical measures may be divided into two classes: one class being of those which may be fairly regarded as free from danger, but which are seldom efficacious; the other of those which, though they offer a very good chance of success, often put the life of the patient in jeopardy. The dangers consist in excess of inflammatory action, as suppurative ostitis, osteo myelitis, and periostitis. Among the non-heroic plans of treatment may be classed the application of tincture of iodine, blisters, etc., to the surface of the limb at the seat of injury. The action of such irritants must be very slight in deep-seated parts, and troublesome dermatitis may by these be readily produced. Acupuncture, according to the author, usually fails to set up the necessary degree of irritation. The introduction of a seton in the false joint may be regarded as an heroic measure, as it may excite profuse suppuration. Forcible rupture of the false joint and rubbing together of the ends of the fragments, may be regarded as the mildest of the heroic methods; but it may result in nothing more than annihilation of all the results of previous treatment. The cases in which this method may be tried with fair prospect of success, are those where but one bone has been fractured, where there is much displacement of the fragments, and where the connecting bond of fibrous tissue between these bones is thick. The plans of boring the ends of the bones and introducing foreign bodies, as ivory pegs, steel screws, etc., are dangerous on account of the probable result of suppurative ostitis. Resection of the joint, from the fact that it establishes the conditions of a compound fracture, must be regarded as a dangerous operation.

A case is reported by Dr. Becker of a man who had received a compound oblique fracture of both bones of the left leg, at the junction of the middle and upper thirds. At the end of the third month from the date of injury, the fragments of the fibula had united, but at the seat of the fracture in the tibia

there was angular distortion and much mobility, and no osseous thickening or deposit of callus had taken place at the ends of the tibial fragments. Forcible friction of the ends of the fragments having been tried, and also prolonged retention of the limb in a gypsum splint, without any good results, Dr. Becker considered how he might set up in the newly formed connective tissue of the pseudarthrosis just such a degree of irritative action that might result in plastic effusion from the ends of the fragments and consequent development of bone and firm union. As a means of directly attacking the tissues of the false joint, it occurred that the use of a Pravaz's syringe would be suitable, and as a mild irritant fluid a weak solution of carbolic acid was selected. From the results of Hueter's researches on the injection of carbolic acid into inflamed tissues, it was assumed by Dr. Becker that this agent would produce good results when injected into bones. It destroys septic irritants, and is an unlikely agent to set up suppuration. The injured limb having been fixed in a fenestrated gypsum splint, a small quantity of a 3 per cent. solution of carbolic acid was injected between the ends of the fragments of the broken tibia. As no evident result had been produced by this proceeding, a 4 per cent. solution was subsequently injected. This caused no local pain or constitutional disturbance, but set up some inflammatory œdema in the soft parts over the false joint. During the following sixteen days the injections were repeated on four occasions, and on the seventeenth day periosteal thickening could be distinctly felt at the end of the lower fragment. One week later the gypsum splint was removed, and then it was found that the fragments were firmly united. Eight days later there was an abundant deposit of callus on both the anterior and posterior surfaces of the tibia, and at the end of another month there was firm osseous union, and the patient could walk well with the support of a stick.—*London Med. Record*, Dec. 15, 1876.

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The Surgery of the Nervous System.

It is not unlikely that even if the *art* of surgery has reached something like the nearest approach to perfection of which it is capable, there is one direction in which we may hope to see considerable improvement. The surgery of the nervous system, if such a term be allowable, is at present obviously far from satisfactory. We are almost powerless in dealing with that most pitiable, but unfortunately too common, affection known as bulbous nerves, and have often to confess that our resources are exhausted by an obstinate neuralgia in one of the extremities, while many patients in whom a nerve has been accidentally divided are denied any attempt at relief from the surgeon. It is all the more gratifying, therefore, to see that surgeons are turning their attention in that direction. Last year we recorded a case in which removal of a portion of the small sciatic nerve not only relieved the pain of a number of small neuromata in connection with it, but actually caused the disappearance of the tumours. In some of the late numbers of the *Centralblatt für Chirurgie* have been two interesting articles, which, perhaps, indicate the direction in which we may look for advance. In No. 40, October 7, Dr. Paul Vogt, of Greifswald, describes a case of tetanus, in which the pulling of the nerves above the seat of injury seems to have caused a really remarkable cure. A man of sixty-three years of age had his hand crushed by the fall of a stone, which wounded it both in front and behind. The wound on the palm had healed, and that on the dorsum was granulating healthily, when, fifteen days afterwards, trismus set in, and was followed by all the symptoms of very severe tetanus, so that eight days after its commencement there were attacks of the most powerful opisthotonos, and tonic spasm of the lower extremities, as well as intercurrent clonic contractions. There was nothing unhealthy about the scar or wound, and no tenderness in the arm or forearm, but great pain was caused by pressure on the brachial plexus. For these reasons, as well as because the age of the patient contraindicated amputation, and because neurectomy must have been practised both on the median and radial nerves, Dr. Vogt determined to loosen soft parts in the proximity of the two wounds, and to cut down on the brachial

plexus and pull it. The large cords were found to be very red. They were separated up as far as the intervertebral foramina, and pulled energetically in both directions. When the patient awoke from the chloroform the tetanus had disappeared. Slight spasm occurred on two occasions afterwards—once during vomiting, and once during defecation—but practically a little stiffness of the jaws and considerable weakness were the only remains of the affection. There was no impairment of motion or sensation in the arm, but a slight pricking occurred from time to time.

The other case occurred to Braun, of Heidelberg, and is taken from the *Deutsche Zeitschr. für Prakt. Med.*, No. 25. A peasant, twenty years of age, sustained a wound in the left arm from a table-knife, which divided both the median and ulnar nerves. Ten months afterwards, knots as large as cherry-stones were to be felt beneath the scar, while the hand was cold, the skin thin, shining, and brownish-red, the nails thick, crumpled, cracked, and furrowed, and the muscles supplied by the two nerves atrophied and paralyzed. The operation consisted in cutting down on the nerves, then, after freshening the ends, sewing them together with silk and catgut; two stitches were placed in the median, three in the ulnar, and one in the internal cutaneous. There was considerable pain on the second day, a good deal of suppuration occurred; but at the end of a month healing was practically complete, though the silk sutures still held firmly, and these were not removed till the end of the sixth week. The progress towards a cure was as follows: At the end of a month no return of sensation or motion, but slightly of electric irritability. After six months the power of movement had returned, and after eighteen months the cure was practically complete, and the patient could follow his employment perfectly well. Braun mentions a similar case under Langenbeck, in which the sciatic nerve was resected. In this instance, sensation, but not motion, had returned at the end of six weeks, though the operation was not performed till two years after the injury.—*Med. Times and Gazette*, Nov. 18, 1876.

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Treatment of Carbuncle by Blisters.

M. Jules Guérin, in a communication to the Académie de Médecine (*Gaz. des Hôp.*, Sept. 14, 1876), says that the most efficacious mode of cutting short the progress of a carbuncle and hastening its cure is to cover the whole of the inflamed part with a large blister, having a hole in its centre to admit of discharges. The blister must be continued on until complete vesication has taken place, and any portion of the carbuncle over which this has not done so will remain hard and resistant. When the blister has taken effect the pain is at once relieved, and the redness and resistance of the tumour disappear, and it becomes benign and inert, its enucleation proceeding under the use of ordinary means, without the aid of the bistoury. When after the discharge of its contents a deep excavation remains, it is useful to apply to the walls a solution of nitrate of silver, with the object of obliterating the open vascular orifices and impeding the absorption of the diseased liquid.—*Med. Times and Gaz.*, Nov. 18, 1876.

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Dressing of Wounds.

Professor Spence, of the Royal Infirmary, Edinburgh, in a statistical report of operations performed by himself in that institution (*Medical Times and Gazette*, Nov. 4, 1876) says: In my Address on Surgery before the British Medical Association, when speaking of the dressing of wounds, I alluded to the successful statistics of the three consecutive years, 1860-1-2, at which time the dressings employed were exceedingly simple. On going round my wards a day or two afterwards with Mr. Furneaux Jordan, of Birmingham, he asked what led me to change the system which had proved so successful I do not recollect what answer I gave, but it could not have been very satisfactory, as on thinking the question over I could not satisfy myself with any reason. But the matter pressed upon me, and I determined to revert to the light dressing, merely moistening the lint with the boracic solution instead of water. I tried

it first in a most unfavourable case of amputation of the upper arm; a single layer of lint moistened in the lotion was laid over the stump, and maintained in position by another strip encircling the limb, the whole being kept damp by means of a covering of wax-paper. This was left untouched for two days, when I found the wound united; the sutures were removed, strips of plaster applied, and the whole stump healed by first intention. The same method was followed in an excision of the mamma, only with the addition of a drainage-tube introduced to prevent collection of serous and sanguineous matters, and it also healed by primary union. Since then, until the present time, I have dressed all my operation cases, whether amputations or excisions, in the same way (lint soaked in boracic solution), not with lint soaked in carbolized oil (1–20), with the exception of the operation for irreducible luxation of the knee, in which case I operated under carbolic spray, and subsequently dressed on the antiseptic method until putridity in the discharge occurred, after which it was dressed simply with carbolized oil lint. In using this boracic solution dressing, say in an excision of the breast, the method is, after the wound has been thoroughly cleansed by pouring a stream of tepid carbolic lotion over the surface, and closed by sutures, two separate layers of lint which have been soaked in the solution, and wrung nearly dry, are laid over the line of incision and contiguous surface. At first the upper layer is occasionally removed, wetted, and reapplied, without removing the under layer next the wound, merely to keep that layer moist. Drainage-tubing is used to favour the escape of any blood or serous discharge, and to give an easy means of occasionally washing the wound gently out by means of a syringe. Unless there be bleeding there is no need to disturb the deep dressing for twenty-four or even thirty-six hours. After the second day only a single bit of lint is used, covered with wax-paper. The sutures are generally removed about the fourth day, but, before doing so, strips of strong adhesive plaster are applied between the stitches so as to maintain the edges of the wound in apposition, and these straps should not be removed unless they become loosened or dirty. In most cases I leave the sutures long, merely twisting them so as, if bleeding occur, to allow the wound to be reopened and all clots washed out. The surface is then cleansed, the edges of the incision closed by the sutures, which are then cut short, and the dressing applied; thus reactionary oozing and its effects are guarded against, and primary union generally obtained. In regard to the comparative advantages of the boracic lotion or of the carbolized oil dressing, I can scarcely speak, for both have answered well. I certainly prefer the former in cases of excision of tumours and joints, and in amputations when the soft tissues are healthy; but in cases of amputation or excisions of joints, in which there are old sinuses and a diseased state of the skin, the oil dressings seem to meet the requirements of the case better, and are more easily applied and removed without causing pain. In using oil dressing I apply a narrow strip of waxed paper over the line of incision as a protection from the irritating quality of the carbolized oil.

What has impressed me most forcibly in favour of the simple dressing is the primary union of large incisions, and the small amount, if any, of local irritation, in those cases of excisions of tumours, and in cases of amputation in which the state of the soft parts was favourable to the use of the boracic lotion dressings. In the case of acute strangulated inguinal hernia, the nature of the structures implicated, the previous attempts at reduction by taxis, and the necessity for opening the sac were not favourable to immediate union, yet the whole incision healed without a drop of pus, even at the points of suture. The dressing consisted of a flat layer of sponge, wrung out of boracic wash, inclosed in a fold of lint wetted in the same solution, applied over the wound, and supported by the ordinary spica bandage, and left undisturbed for three days, when the wound was found healed, and the sutures were removed. I never use the prepared "boric lint," because the undissolved crystals often excite great local irritation. As the salt is very sparingly soluble in water, there is no risk of the solution being too strong or irritating. The lint, when soaked in it, is wrung nearly dry before being applied.

The Essence of Lister's Method.

In the course of a lecture on the value of Professor Lister's method, as evidenced by the results obtained in his clinic at Freiburg, Professor CZERNY (*Berliner Klinische Wochenschrift*, No. 44, 1876) pointed out that his colleague, Dr. Hegar, had recently performed sixteen successful ovariotomies consecutively, without making use of Lister's method, in the exact sense of the word, at all. The conditions, however, under which he operated, and to which his success was mainly due (the other element being a careful selection of cases), really exemplified the truth of the principle on which Lister's method depends —namely, the exclusion of the unknown bodies which are suspended in the air, and which excite inflammation, if absorbed, by their contact with the wound, and proved that Lister's method, which is still expensive and complicated, may be materially simplified, without interfering with the basis on which it rests. Professor Hegar's plan was the following: Before each operation the theatre and the room in which the patient was to stay after the operation were purified with sulphur, and the patient, the surgeon and his assistants bathed from head to foot. All the spectators were bound by oath not to have entered a dissecting-room for eight days, nor to have visited any case of infectious disease, and to have thoroughly disinfected their clothes. Further, before each time of using, all the instruments and sponges were washed with pure chlorine water, the abdominal cavity and every suture were washed with chlorine water, and the wound in the abdominal walls was thickly covered with salicylic or carbolized wool.—*Med. Times and Gaz.*, Nov. 18, 1876.

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Hemorrhage after the Application of Esmarch's Method.

Dr. KUPPER, of Elberfeld, points out (*Deutsche Medicinische Wochenschrift*, No. 43, 1876) that Esmarch's plan of arresting hemorrhage during surgical operation is attended with one serious disadvantage. When the large vessels have been tied, and the elastic ligature has been removed, there is usually free and prolonged bleeding from many small branches, so that the surgeon is often compelled to tie twice or thrice the number of vessels that he need have tied had Esmarch's apparatus not been used. When the antiseptic spray and dressings are used, this bleeding is especially disadvantageous. This application of Esmarch's apparatus to a limb is followed, as is well known, after removal of the elastic ligature, by intense redness of the skin, and by increase of temperature in parts below the seat of compression. From the analogy of these phenomena to those presented by the external ear of an animal after division of the cervical portion of the sympathetic, the author has been led to the conclusion that the application of Esmarch's apparatus causes paralysis of the arterial muscular tissue, either by direct action on this tissue or by indirect action on its nerves. The less the contraction of the muscle, the greater remains the lumen of the vessel, so that a thrombus is not so readily formed. Cold arrests hemorrhage, because it excites vigorous contraction of the muscle whilst warmth by relaxing this tissue favours loss of blood. The author proposes, as a means of preventing hemorrhage due to paralysis of arterial muscular tissue, the application of a strong induced current, one pole being placed at some distance from the seat of operation, the other on the surface of the wound, and in direct contact with the divided vessels and nerves. A case is reported, in which this proceeding was practised with the expected result.—*London Med. Record*, Dec. 15, 1876.

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Apparatus for the Performance of Direct Transfusion.

Dr. ROUSSEL, of Geneva, at a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, Oct. 28, 1876), demonstrated the application of his apparatus for the performance of direct transfusion from vein to vein. Before applying it to the arm of a man who was seated at the table, Dr. Roussel explained the construction of his very ingenious instrument, which he had devised as long since as 1864, but which, although it was then brought before the pro-

fession at Paris, had not received much attention until the present year, when a paper describing it was read at the Royal Society of Medicine of Belgium. The object of the apparatus is to prevent coagulation of the blood that is drawn, and therefore to do away with the necessity of defibrination, a matter of great importance to the patient for whom the operation of transfusion is rendered necessary; it is therefore composed wholly of hardened pure caoutchouc, which, unlike the ordinary vulcanized caoutchouc of commerce, has no effect on the blood. As in Aveling's apparatus, Dr. Roussel's instrument is made up of a tube with a Higginson's syringe in its course, to serve as an aspirator of the blood from the supplying vein, and the alternate compression and expansion of which allows an uninterrupted flow of blood to take place; this bulb is perfectly smooth internally, and has a capacity of ten grammes, so that the quantity of blood transfused can be exactly measured. The manner in which the blood is drawn constitutes the chief novelty of the present instrument, and its great advantage over all other apparatus. The tube is in communication with a rigid cylinder, open at each end, and applied over the seat of the vein required to be punctured; the cylinder is fixed in position by being surrounded by a rigid cup, which can be exhausted by an elastic pump in connection with it. The exhaustion of this cup not only fixes the apparatus to the arm, but also increases the turgidity of the vein over which it is applied. The cylinder within it is then closed by the introduction at its upper extremity of a lancet or scarificator, the exact depth of which can be regulated. At the moment of operating, this lancet is depressed into the vein. Before, however, this is done, all air is driven out of the cylinder and tube by filling these with tepid water, by means of the ball-syringe and a second tube entering the cylinder opposite to the conducting tube. To the extremity of the latter a mouthpiece provided with two canulas is attached. One of them is introduced into the vein of the recipient. At the junction of the canulas is a stopcock to direct the flow of fluid into one or other of them. The apparatus being filled with water, the vein is opened by the scarificator, and the contents of the cylinder and tube pumped out. The water being expelled through the free canula until the blood only flows from it, the stopcock is turned, and the blood (with the few drops of water left in the canula now in use—that, namely, which is inserted into the vein of the patient) is injected into the patient's arm. It is impossible to give clearly an accurate idea of the apparatus without the aid of drawings, but the reader is referred for a fuller account to Dr. Roussel's paper in the *Bulletin de l'Académie Royale de Médecine de Belgique*, t. x., 3e sér., No. 6. Having described the apparatus, Dr. Roussel showed its practical application, explaining every step in the experiment as he proceeded. A few ounces of blood were thus withdrawn from a man's arm, and the Fellows and visitors present were enabled to judge of the value and efficiency of the instrument by ocular demonstration. Great interest was shown in the experiment, and on its conclusion Sir James Paget congratulated Dr. Roussel on the perfection to which he had brought his apparatus, and conveyed to him the thanks of the Society for his instructive demonstration.

The *Lancet* of Nov. 4 gives further particulars respecting the use of this ingenious apparatus. Dr. Roussel holds that the successful conditions for transfusion are—1st. That the blood of the giver and receiver be of the same animal species, and from the same organic source from man to man, and from vein to vein. 2d. That it remain perfectly pure in its nominal, chemical, and physiological conditions. 3d. That the operator be able to regulate the quantity of blood transfused in a given time, and inject the quantity that the state of the patient demands. 4th. That the operation be quite free from danger by connecting the vein of the giver with the vein of the receiver by a direct channel from which the air has been expelled, and by opening the giver's vein under water.

The *modus operandi* has already been fully described. It only remains to be stated that a small quantity of bicarbonate of soda may be added to the tepid water, so as to thoroughly clean the apparatus, and that cold water may be used in cases of great urgency. In Dr Roussel's words, "The motive ball forces the blood into the anæmic vein by degrees as it draws it from the turgid

veins, every particle of it having remained less than a second only out of the human vessel, inclosed in a full tube, and the blood conducted by an artificial vein and heart, hermetically closed, damp, warm, and soft as are the human vessels. The blood is not modified as regards its fibrine, globules, gas, temperature, or density; it passes from one system to another with all its primitive vitality, and continues to live on, producing in the patient all the effects which it would produce in the vigorous being which supplied it." The quantity of blood transfused ought not to exceed 200 to 300 grammes. In order not to overcharge the heart and lungs, not more than from 60 to 80 grammes of blood should be given in a minute, less than one gramme during a diastole. The operation might be performed in eight or ten minutes. Dr. Roussel states that he has performed the operation in fifty-two cases, always with benefit, and in no case has an accident or fatal result occurred. The cases include acute anæmia after childbirth, hemorrhage after operations, exhaustion after prolonged suppuration, malignant fevers, septicæmia, etc. The accounts are published in his book, "Transfusion du Sang" (Paris: Asselin, Editeur).

Midwifery and Gynæcology.

The Genu-Pectoral Position in Shoulder Presentation.

Dr. THEOPHILUS PARVIN reports (*Am. Practitioner*, Jan. 1877) a case of shoulder presentation which was converted into a pelvis and feet presentation by means of the genu-pectoral position.

The patient, twenty-one years of age, in good health, and with normal pelvis, had been in this, her first labour, about sixteen hours. There was no difficulty in learning, by the touch alone, that the left shoulder was presenting, the back being anterior, and the head lying in the right iliac fossa.

The os uteri was about half dilated; the membranes unruptured; the uterine contractions were not as regular nor as strong as in vertex presentation, the labour in this regard offering that peculiar physiognomy which Depaul[1] so justly insists upon as characteristic when there is first descent of any other part of the fœtus than the head.

My first effort, Dr. Woolen, who requested me to see the case in consultation, approving, was to convert the presentation of the shoulder into that of the head by the method of Dr. M. B. Wright; in other words, to perform cephalic version. Failing in this after a few minutes' trial, the patient lying upon her back, and fearing possible rupture of the membranes if I persisted in my efforts when there seemed such resistance to the attempted change in the fœtal position, I had the patient turn upon her knees and chest. Immediately after she assumed this position, I introduced two fingers into the vagina and up to the presenting part, preparatory to renewing the effort at cephalic version. To my surprise I found that the shoulder had already receded, moving upward and toward the right side of the false pelvis. Immediately taking advantage of what nature was evidently working towards the accomplishment of, I assisted, by gently pressing and pushing with the fingers, the ascent of the left shoulder, and within ten minutes had a presentation of the pelvis and feet, the sacrum being towards the right sacro-iliac symphysis.

Shortly after the change of presentation, the membranes ruptured, and the patient resumed her former position upon the back, and in two hours more was delivered of a living child, weighing seven pounds and a half.

The genu-pectoral position, in presentation of the body of the child, was directed by Deventer, in his work on obstetrics published in 1701. Smellie, too, half a century later than this, advised it. Bard, the first American author

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[1] Leçons de Clinique Obstétricale.

of an obstetrical work, advocated it; and Shippen, the first American teacher of obstetrics, taught it in his lectures. But all these teachers looked upon this position as merely facilitating podalic version. To Dr. R. P. Moxon, of Syracuse, New York, is the credit to be given of showing that by the help of this position cephalic version may be performed.

In view of the case that I have narrated, it may be well to be guided by the effect that the change of position on the part of the mother may have upon the presenting part, simply facilitating what nature seems to be attempting, letting the choice between presentation of the pelvic or of the cephalic pole be hers. When the child presents *pelotonné*, the heels and the ischial tuberosities, as Depaul observes, are almost in the same plane, and engage at the same time in the pelvic cavity; we have then a dilator very little inferior to the head, and if the membranes can be kept unruptured until dilatation of the vulva commences, and any approximation to deep anæsthesia forbidden, so that the patient's best voluntary efforts can be invoked when needed, assisting in prompt delivery of the head, there can be little danger to the child.

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The Choice of Operation in Cases of Contracted Pelvis.

In the annual report of the Lying-in and Gynæcological Hospital (*Bericht der Neuen Gynëkologischen Universitäts Klinik*, Leipzig, 1876) Prof. HILDEBRANDT expresses at considerable length his views as to the management of labour in contracted pelves. These have several features of originality, and differ somewhat considerably from those generally accepted in this country. The induction of premature labour occupies a prominent place among the means used. This is resorted to in all cases, provided they come under observation in time, when the pelvis is flattened, and has a conjugate diameter between 6.5 and 8.5 cm. (2.5 and 3.3 inches); also in pelves having a conjugate diameter between 8.0 and 9.5 cm. (3.1 and 3.7 inches), if there is general contraction in addition. Both forceps and version are regarded as having but a very limited range of utility in distorted pelves, and as being apt to prove dangerous and fatal to both mother and child. Version is considered permissible only with a lax, unirritated uterus, especially if the membranes are unbroken, or have only just ruptured, and when there are conditions present, apart from the contraction of the pelvis itself, which prevent the head engaging in the brim, such as pendulous abdomen or excessive pelvic inclination. Forceps are never to be applied except when the head has nearly passed the plane of the pelvis where the distortion exists, and only slight traction is required to overcome the remaining obstruction. If three steady tractions do not avail, the instrument is to be at once discarded, and craniotomy performed.

Setting aside these exceptional cases, the mode of proceeding is the following: As far as possible, even in higher grades of deformity, delivery is left to the powers of nature, and ample time is allowed for the moulding of the head. If symptoms occur indicating the inability of nature to effect the expulsion, or calling for a speedy completion of delivery, craniotomy is resorted to, without regard whether the child is alive or dead. This operation is performed by the curved trephine of Braun of Vienna. The expulsion of the head afterwards is left to nature if possible; but if the pains are inadequate, or the head too resisting, Braun's cranioclast is used. The solid blade is passed within the skull, the fenestrated blade over the face, and the head is then extracted, when the compression screw has been tightened. This operation Professor Hildebrandt regards as quite free from peril to the mother. The cephalotribe he denounces as the most barbarous and unwieldy of all obstetric instruments, and its use as fraught with extreme danger.—*Obstetrical Journal of Great Britain*, Dec. 1876.

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Uterine Thermometry as a Means of Diagnosticating Pregnancy and Death of the Fœtus.

In the *Lyon Médical*, October 29, 1876, Dr. P. MARDUEL gives the results of the experiments in uterine thermometry by Cohnstein, Fehling, Schlesinger,

and Alexieff. They are as follows: In a gravid uterus containing a living child, the temperature is from 0.27° to 0.54° Fahr. higher than in the vagina, the temperature in the vagina being higher than in the axilla. In a gravid uterus containing a dead child, the temperature is lower than that of the vagina.

The uterine temperature is also raised in inflammations of the organ, as perimetritis, endometritis, etc. Alexieff has, during labour, taken the buccal and rectal temperatures of the fœtus, and has found them to vary from 1.26° to 2.34° Fahr. for the rectal temperature, and from 0.54° to 1.26° Fahr. for the buccal temperature, above that of the vagina.—*London Med. Record*, Dec. 15, 1876.

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Puerperal Glycosuria.

At the meeting of the Biological Society of Paris, on the 11th November, M. Gubler made an interesting communication (*Le Progrès Médicale*, Nov. 18th) embodying the results of his researches upon glycosuria in the puerperal state. He finds that saccharine urine follows suspension of lactation in healthy women, from diseases of the infant, and also when lactation is arrested on account of some slight ailment on the part of the mother, but not if her disease be a severe one—*e. g.*, typhoid fever. The glycosuria can be prevented by slight purgation; it is never very marked, but the presence of sugar in the urine is always sufficient to be detected by the usual reagents. A solution of bichromate of potash and sulphuric acid gives a larger precipitate than the ordinary reagents, possibly because of the existence of some other substance besides glucose. The absence of albuminuria is accounted for on the ground that human milk is rich in lactose, but poor in casein and butter. The conclusion drawn is that glycosuria appears when lactation is suspended, but only when the general health is not much disturbed; it is usually slight, appears in twenty-four to thirty-six hours following the arrest of lactation, and lasts for about a week. Pregnant women sometimes pass saccharine urine, and especially primiparæ, towards the end of pregnancy.—*Lancet*, Dec. 9, 1876.

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Retention of Urine in Females.

Dr. Dollmayr, of Vienna, directs attention, in the *Medicinisch-Chirurgisches Centralblatt*, No. 40, 1876, to what he believes to be a frequent though seldom recognized cause of retention of urine in females. The form of retention to which the author alluded is only met with, he states, in subjects of advanced age and in those who have long ceased to menstruate. The first indication of the urinary disturbance is a burning sensation at the external meatus during micturition, slight at first, but gradually extending and increasing in intensity, so that the patient soon, whilst passing urine, feels as if a red-hot needle were lodged in the whole course of the urethra. The stream of urine becomes smaller, and at last there is much difficulty in relieving the bladder. If, in an extreme case of this kind, a close examination be made of the external urethral orifice, this will be found blocked up by small ruddy excrescences which bleed freely when touched. This condition the author is disposed to attribute to continued inflammatory action set up in the mucous membrane in the urethra by some local cause, the result of such action being polypoid thickening of the membrane. The excrescences may be speedily destroyed by the application of nitrate of silver or sulphate of copper, and then the urethral pains and the difficulty in micturition will at once disappear. In conclusion, the author insists on the necessity, in cases of retention of urine in the female, of submitting the urethra to close examination.—*London Med. Record*, Dec. 15, 1876.

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Operation for Vesico-Vaginal Fistula.

Dr. Simon, of Heidelberg (*Obstetrical Journal of Great Britain and Ireland*), in a paper on the method of operating for vesico-vaginal fistula, compares his own operation with that of Bozeman, of New York. Simon operates in lithotomy position, draws the parts round the fistula forwards, pares the edges

with a knife, uses a simple knotted silk suture, enjoins no measures of precaution as regards passing urine after the operation, and allows the patient, if she please, to leave her bed on the second or third day after the operation. Bozeman operates in the knee-elbow position, leaves the fistula *in situ* while operating, pares the edges with scissors, employs a complicated wire suture, leaves a catheter in place after the operation, and often gives large doses of opium. Dr. Simon gives seven cases, four by himself and three by Bozeman, who operated when on a visit to Heidelberg. From the results of these cases, Dr. Simon considers his method superior to Bozeman's.—*London Medical Record*, Dec. 15, 1876.

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Obliteration of the Os Uteri in a Pregnant Woman.

Dr. CHAMBAUD gives (*Archives de Tocologie*, September, 1876) an account of a case of complete obliteration of the uterine mouth in a pregnant multiparous woman. The case began as follows: On March 2, 1875, Dr. Chambaud was called to the patient, a young healthy woman, aged twenty-six. She was in bed, sweating profusely; respiration short and hurried; pulse regular, 130 per minute. She was in great pain in the loins; the abdomen was hard, tense, and tender; the uterus was enlarged; and apparently there was a pregnancy of two months. Dr. Chambaud ordered fifteen leeches to be applied to the right iliac region, with warm poultices to assist the flow of blood. As the bowels were confined, an injection of oil was ordered. A few days afterwards, the patient was much better. On March 14, Dr. Chambaud was called again to her, as there was a purulent discharge from the vagina. On examination by the speculum, Dr. Chambaud found considerable ulceration of the os, with a discharge of thick purulent matter like white of egg. He at once applied nitrate of silver, and repeated this application once a week till June 13, following; that is, he made fourteen cauterizations. He did not see her again till June 27, when he found the os uteri completely closed by a cicatricial tissue joining together the lips. He then called in Dr. Bessette, who also examined the patient, and found the obliteration of the os complete. Having thus become quite clear as to the diagnosis, Dr. Chambaud wrote to ask Professor Depaul how he should treat the case, and was advised by him to leave it till term, when, if the uterine efforts were insufficient to break down the cicatricial tissue, the division thereof by a bistoury would be necessary.

On August 15, at half-past three in the morning, Dr. Chambaud was called to the patient, when he learnt that she had been in labour fourteen hours. After waiting three hours to see if some instruments he wanted had arrived, Dr. Chambaud proceeded to make an incision through the closed os. The incision made was only large enough to admit the extremity of a finger, and in making it the bag of waters was pierced, and liquor amnii escaped. Dr. Chambaud then broke down the remaining tissue with his finger, and the head coming down filled up the opening completely. At half-past twelve a non-viable female child was born, which died the next day. The patient had a high temperature and frequent pulse for a few days, at the end of which she made a good recovery.

Dr. Chambaud is convinced that if he had seen the patient the day after he found her out instead of waiting a fortnight, he would not have had the task of communicating this curious and interesting case.—*London Med. Record*, Dec. 16, 1876.

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Intestinal Obstruction produced by an Ovarian Cyst.

In the *Dublin Journal of Medical Science* for August, 1876, Dr. R. RYAN relates a case in which acute obstruction of the bowels occurred in a patient suffering from cystic disease of the ovary, but was relieved after the cyst had been tapped. The patient, thirty years of age, came under observation in January, 1876. Four weeks previously, being ten months after her marriage, she had given birth to an eight months' child, which survived only twelve days. Some enlargement of the abdomen had been noticed for three and a

half years, but menstruation had been normal previous to her pregnancy. Fluctuation was found over all the abdomen in front, with dulness on percussion. Dulness extended into the right iliac region, the left iliac region being resonant. The diagnosis made was cystic disease of the ovary, probably unilocular, and growing from the left side. A fortnight later, Dr. Kidd, of Dublin, saw the patient, and confirmed the diagnosis. As her health was good, and the tumour not appreciably growing, he did not recommend operation, although considering the case a peculiarly favourable one for ovariotomy. Four or five weeks later she was attacked by severe pain in the left ilio-lumbar region, followed by vomiting and abdominal distension. A dose of castor oil produced a free discharge from the bowels, and the symptoms subsided. On April 30, very severe pain and vomiting again occurred. Purgatives were vomited, and injections produced only a slight evacuation from the lower bowel. On May 3, Dr. Ryan saw the patient again. There were then symptoms of acute obstruction, with probably local peritonitis, the temperature being 100°; pulse 110. The track of the descending colon was resonant and prominent. The cyst was then tapped, and about eight pints of thin, pale, straw-coloured, transparent fluid removed. Two grains of calomel with half a grain of opium were then given every four hours. On the third day the pulse was 115, temperature 101°, and not even flatus had passed. About twelve inches of a long enema tube were then introduced, affording exit to a quantity of flatus. An injection was then given, consisting of six drachms of tarturic acid and an ounce of bicarbonate of soda, each dissolved in a pint of cold water, and thrown up successively by means of a pint syringe. Four hours after the bowels acted freely, and from this time she rapidly recovered. The author considers the point of obstruction to have been the sigmoid flexure, which was in close relation to the pedicle of the cyst and its least movable part.—*Obstetrical Journal of Great Britain*, Jan. 1877.

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Injection of Water into an Ovarian Cyst, followed by a Fatal Result.

At the meeting of the Société Anatomique in March, 1876, the following case was related by M. Saint-Ange. The patient, aged twenty-five, was admitted into the Maison de Santé under M. Marc Lée, on February 1, 1876. After a normal delivery in August, 1874, she had first noticed a small tumour on the right side of the abdomen. This increased rapidly in size, but menstruation was regular. In August, 1875, the tumour was tapped, and eighteen litres of viscous chocolate-coloured fluid drawn off. The cyst, however, soon filled again. In January, 1876, she came under the care of a practitioner who repeated the tapping, again drew off viscous fluid, and injected some water into the cyst, to facilitate its exist. From this time severe abdominal pain with fever and vomiting came on, indicating inflammation of the cyst, and the tumour rapidly regained its volume. At her admission into the Maison de Santé there was fluctuation over the major part of the tumour, but a solid mass was felt at the upper part on the right side. The grave condition of the patient was considered to be a contra-indication to intervention. Nevertheless, the increasing dyspnœa obliged M. Lée, on February 21, to tap the tumour. This was done with a special apparatus devised by M. Ferrier, resembling Potain's aspirator, but of larger dimensions. Fifteen litres of purulent fluid were drawn off in this way. On vaginal examination a mass posterior to the cervix was found to fill the pelvic cavity; the uterus was pushed forwards and upwards. After the operation only a partial amendment took place. The temperature fell to the normal standard, but the vomiting continued, and the patient became extremely emaciated, and died on February 28, a month after the tapping and injection of water. At the autopsy it was found that the tumour would have been a very easy one to remove. There were no adhesions whatever, except a slight one to the omentum. The mass which filled the pelvis consisted of a secondary cyst, but was not adherent. The pedicle was slender. The apparently solid mass at the upper part was found to consist of a cyst having very thick walls and gelatinous contents. The uterus and left ovary were healthy.—*Obstetrical Journal of Great Britain*, Jan. 1877.

Medical Jurisprudence and Toxicology.

Exfoliation of Mucous Membrane of Stomach after Swallowing Sulphuric Acid.

M. LABOULBÈNE has communicated to the Paris Academy of Medicine (*Gazette des Hôpitaux*, December 21) the record of a case in which he asserts that the mucous membrane of the stomach, and part of the mucous membrane of the œsophagus, have been expelled a fortnight after a poisonous dose of sulphuric acid had been swallowed. The patient was a man of fifty-nine, who, through inadvertence, swallowed two or three mouthfuls of oil of vitriol. He immediately experienced a sense of burning along the gullet and at the pit of the stomach; he had colicky pains all over the belly, and his body became bathed with perspiration. In less than ten minutes some milk was given to the man. This was followed by vomiting; then, for the first time, the patient felt some pain and tightness in the throat, and it was probable that the rejected liquid led to the charring of the inside of the cheeks subsequently found. The important point to notice is, that the acid was in contact with the gastric mucous membrane five or six minutes. When admitted to the Necker Hospital, the day after the accident, the pain in the throat, along the gullet, between the shoulders, still continued; the colic had ceased, but there was frequent vomiting and continual expectoration. On examining the mouth, the lips and anterior two-thirds of the tongue were found natural; the posterior one-third of the tongue was covered with a closely adherent stucco-like plâque; so also were the uvula, the tonsils, and the pillars of the fauces. On part of the palatine arch there was a large bulla, and the mucous membrane of the cheeks was in some places swollen up, in others peeling off in shreds. The mouth gradually improved, but deglutition continued very painful. Four days after the accident he had excessive hiccough, which lasted three days, and then entirely ceased. Fourteen days after the accident he was seized with repeated attacks of severe cough; he felt something in his throat choking him; he vomited some mucus streaked with blood; and after several minutes of great distress he drew out with his fingers some blackened shreds, which, when placed in water, were found, as asserted by M. Laboulbène, to be *débris* of œsophageal mucous membrane. The following evening he had again this choking sensation, worse than before. After about twenty minutes of distress he pulled out with his fingers a pulpy black mass. This, when floated out, was found oval in shape and curved; its width equivalent to two hand-breadths. In one spot near the middle there was a fibrinous clot adherent to it, and at one end there was a prolongation of a tubular form, and measuring one inch and a half. After the expulsion of these membranes the patient was much relieved, and his breathing became easy; the day after the swallowing of liquids also was accomplished with less trouble. By the thirty-seventh day he had so much improved that he was able to swallow slowly some well-masticated solid food; he was still extremely emaciated, and it was difficult yet to make a prognosis. The membrane, examined microscopically, showed fibres of connective tissue, elastic fibres, and vessels filled with blood, which appeared as if it had been charred.

In the discussion which followed, M. Gubler declined to accept the view that this was the mucous membrane of the stomach, on the ground that no peptic glands could be discovered. He thought the material produced was allied rather to the pseudo-membrane of diphtheria, or that produced by the contact of irritants. M. Villemin pointed out, with respect to the peptic-glands objection, that as these glands have a very thin wall, and are, in fact, only recognized by their epithelium, the contact of the acid might easily destroy or disturb the epithelium, and thus render them indistinguishable.—*Med. Times and Gazette*, Jan. 6, 1877.

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THE MONTHLY ABSTRACT

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Anatomy and Physiology.

The Functions of the Cerebellum.

Professor NOTHNAGEL (*Virchow's Archiv*, Oct. 1876), in continuation of his papers on the function of the brain, publishes an account of his researches on the functions of the cerebellum, the results of which he sums up as follows:—

1. The cerebellum arranges definite motor processes; its function is also to some extent motor. This relation to motor processes is shown both by irritation and by destruction.

2. All the phenomena show an intimate functional (as well as anatomical) connection between the two halves of the cerebellum.

3. The complete destruction of the same part of the cerebellum which gave rise, when irritated, to the before-mentioned motor effects, was not followed by any "negative phenomena." (*Ausfallserscheinungen*, Goltz.)

4. The destruction of one hemisphere, or of both alone, or of the anterior and superior part of the vermiform process alone, produced no abolition of co-ordination. No motor irritation phenomena followed the mechanical irritation of these parts.

5. The recognized destruction of co-ordination was produced only by such an injury as implicated at the same time the depth of both the hemisphere and the vermiform process.

He promises further observations on the special connection of these motor functions with those of the brain proper, and also a discussion of the co-ordinating function of the cerebellum.—*London Med. Record*, Jan. 15, 1877.

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The Functions of the Pneumogastric and the so-called Inhibitory Nerves.

M. ONIMUS (*Comptés Rendus*) publishes the results of a series of experiments upon the effects of electrical stimulation of these nerves. He says that an ordinary Faradic current is interrupted 30–35 times in a second, and that corresponds pretty well with the number of nervous shocks transmitted along special nerves, so that striped muscles usually respond well to the stimulus; but that automatic and rhythmically acting organs require some numerical relation to be observed between their rhythm and the stimulus, or the effect will be perturbation instead of increase of function. The author, as well as Charles Legros, found that, if the pneumogastric nerve were stimulated by a current interrupted at long intervals, no arrest of the heart's action took place, and that for this latter result 16 or 18 shocks per second were required for warm-blooded animals.

From new experiments made by the author, he announces that by even and moderate stimulation of the heart, at intervals corresponding somewhat to the existing cardiac rhythm, stronger contractions are produced, and that by this means the hearts of animals nearly poisoned by curare or chloroform can be re-awakened to functional activity.

The peristaltic action of the intestines, which is arrested by the ordinary Faradic current, was increased if the interruptions were somewhere about

equal to the normal rhythm of 15 or 18 per minute: for this result to be obtained it was found necessary that the intestine should not be empty.

The vaso-motor nerves he found to be similarly influenced, currents interrupted at long intervals producing not tonic contraction, but dilatation with increase instead of lowering of the temperature. He concludes that the nerves of vegetative life and of unstriped fibre, above all when they belong to organs which have rhythmic, co-ordinated, and automatic movements, do not respond to artificial stimuli in the same way as spinal nerves. When the excitations become too numerous and too rapid, they cease to provoke functional acts, and become causes of perturbation. The phenomena of arrest which have been obtained in these conditions are the results of this pertubation. Moreover, it seems from his experiments that the alleged depressor nerves come under the general laws of action of all the nerve-filaments, their physiological excitation provoking always the activity of the organs to which they are distributed.—*London Med. Record*, Jan. 15, 1877.

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On the Different Action of the Right and Left Pneumogastric Nerves.

At the meeting of the *Société de Biologie* of Paris, Dec. 9 (*Progrès Médical*, Dec. 16, 1876), M. Tripier read a paper on this subject. He first related experiments which he had made with M. Arloing, from which it appeared that the right pneumogastric acts more especially on the heart, and the left on the lung; but he remarked that variations exist according to the species of animals and individuals. Sections of one of the pneumogastrics could cause death. There are extant at least two cases of death in man after division of the right pneumogastric. In the ass, in twelve divisions M. Tripier observed seven deaths, four times from division of the right, and three times of the left; in the rabbit, in nine divisions, three deaths, all from the right; in the horse, on the other hand, in more than forty divisions only one death took place, and that was after division of the right pneumogastric. It appears that in some cases the cause of death is found in paralysis of the lower part of the œsophagus, to the constant accumulation of food in that part of the digestive tube, and its penetration into the air-passages. In ligature of the large vessels of the neck, it would be dangerous to include the pneumogastric nerve.—*London Med. Record*, Jan. 15, 1877.

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Relations of the Liver to the Formation of Urea.

Evidence has been accumulating for some time past tending to show that intimate relations exist between the liver and the production of urea in the system. By Meissner it was remarked long ago that urea was contained in considerable quantity in various glands, but especially in the liver; and Prévost and Dumas pointed out that the amount contained in the liver was increased after extirpation of the kidneys. Budge demonstrated that the disintegration of the albuminoids is very active in this gland; and Cyon that if the blood be transmitted through the vessels of the liver the proportion of urea contained in it is augmented; and the general opinion of physiologists is in accord with the view originally taken by Bowman, that the urea is not formed at or by the kidneys, but that these organs serve only as filters, by which it is removed from the blood as fast as it is formed. A remarkably interesting memoir has just been published in the *Archives de Physiologie*, in which M. Brouardel adduces many striking pathological facts in favour of the view that urea is formed, in part at least, if not wholly, in and by the liver. The conclusions at which he has arrived, given in a somewhat abbreviated form, are that in severe cases of icterus, the proportion of urea in the urine diminishes, or altogether disappears; that in the form of icterus produced by phosphorus poisoning, whether accidental in man, or the result of direct experiment on animals, the amount of urea undergoes considerable diminution; although in simple jaundice the quantity of urea eliminated does not diminish, and if present in large quantity the circumstance may even be regarded as affording grounds for a favourable prognosis.

In suppurative hepatitis, the amount of urea, as was shown by Parkes, augments in the earlier periods of the disease, but it diminishes when the abscess has destroyed a large portion of the liver, though there may be a considerable degree of coincident fever. In biliary lithiasis leading to obliteration of the ductus communis choledochus and atrophy of the hepatic lobules, the urea diminishes in quantity. The diminution appears to be most notable during the crisis of hepatic colic, and the same thing is observed, according to Regnard, in intermittent hepatic fever. In cirrhosis, whether of the atrophic or of the hypertrophic form, the quantity of urea eliminated is extremely small, even when the patient continues to eat well. In diseases of the heart, the development of cardiac liver causes considerable diminution of the excretion of urea. The variations consequent on repose and appropriate treatment may serve to establish the prognosis. In cases of fatty degeneration of the liver occurring in phthisical patients and in those affected with suppuration in the bones, the proportion of urea falls to a very low point. As a general rule, it may be stated that in cases of chronic disease of the liver, such as cancer or cystic disease, the destruction of a large portion of the substance of the organ is attended by a fall in the proportion of urea. On the other hand, cases of congestion of the liver are indicated and characterized by an augmentation in the elimination of urea; and so also in transient glycosuria the urea rises when the sugar is present, or just at the period of its disappearance; whilst in diabetes the amount of urea exceeds in some instances the quantity present in any other disease. Lastly, in lead colic, the liver contracts and the urea is diminished, but when the colic has passed off, the liver resumes its normal size, and the amount of urea becomes normal.

From all this M. Brouardel believes that it may be regarded as demonstrated that in diseases of the liver the quantity of urea secreted and eliminated in the course of twenty-four hours is dependent on two principal conditions—first, the state of integrity or of alteration of the hepatic cells, and, secondly, the greater or less activity of the hepatic circulation. It follows, he observes with reason, that the variations in the quantity of urea eliminated by the kidneys, providing these are healthy, may be employed at the bedside to establish the diagnosis and prognosis of lesions of the liver.—*Lancet*, Jan. 13, 1877.

Materia Medica and Therapeutics.

Action on Pilocarpium Muriaticum.

Dr. Ad. Weber describes this substance (*Centralblatt für die Medicinischen Wissenschaften*, No. 44) as a white transparent crystalline salt, with a slightly bitter and astringent taste, soluble in its own weight of water, yielding a colourless solution. From 100 kilogrammes (220 lbs.) of jaborandi, 70 grammes (1540 grains) of the salt were obtained. It may be reckoned that from 30 to 40 grammes of pilocarpin are lost by the process of extraction. The drug was obtained from Pernambuco jaborandi, as it is said that that of Brazil does not contain the alkaloid. This drug eminently possesses those properties, in virtue of which jaborandi is used in practice, viz., strongly to excite the salivary and cutaneous secretions. After the subcutaneous injection of a small dose (half a cubic centimetre of one-half per cent. solution) into the upper arm, the increased secretion of saliva occurred in from three to five minutes, and lasted for hours after that of the skin; in fact it has been observed to cause salivation without affecting the skin. The duration of the salivation and the amount of saliva increase with the dose.

The secretion of sweat generally sets in five minutes after that of the saliva and usually begins on the head and spreads over the body.

A slight acceleration of the pulse, five to ten beats per minute, is common, though it falls as the cutaneous secretion diminishes. An increase of temperature (0.5° to 1° C.) occurs, and a pronounced feeling of chilliness is complained of. The contraction of the pupil begins late, and generally lasts longer than the other phenomena by twelve hours.

With regard to its application in practical medicine, the author recommends it strongly for cases of opacity of the vitreous body following irido-choroiditis, ten or twelve applications producing a most marked effect. In a case of croup in a child, in which tracheotomy had been performed, and which exhibited pronounced œdema of the lungs, the injection of a Pravaz syringe full of a two per cent. solution, produced a copious secretion of saliva for three and a half hours, when the asphyxia had quite disappeared. No ill effects followed the injection.—*Lond. Med. Record*, Jan. 15, 1875.

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Balsam of Peru as a Dressing for Wounds.

Dr. Wiss recently made a communication to the Surgical Society of Berlin on the surgical uses of balsam of Peru. He had used it with excellent results in the treatment of wounds of all kinds—incised, gunshot, and suppurating wounds, and wounds attended with loss of substance. Its application was attended with a sensation of burning; but all pain soon ceased, even in the most severe wounds. Its application to recent wounds did not produce inflammation or suppuration; and if these were already present, they ceased. In none of the cases thus treated by him were there any signs of putrefaction, even in the most unfavourable conditions of locality and climate; and in all, even in lacerated wounds, union took place by the first intention. In one case, a young man had received a lacerated wound of the head from a blunt-pointed instrument. The aponeurosis of the occipito-frontalis was laid bare on the top of the head, and the skin lay separated in three flaps. After arresting the hemorrhage and cleansing the wound, Dr. Wiss poured Peruvian balsam into it, and applied a compress and bandage. The next day he was astonished to find that the wound had half healed, and that there was no suppuration; and in two days the healing process was completed. In 1875 he had under his care a boy, the points of whose right middle and ring fingers had been torn off by the fall of a sharp plank. On the ring-finger only there was a thread of skin remaining. He dressed the wound with Peruvian balsam. On the second day the gaps were filled up with a brawny but elastic mass, which at first sight resembled a blood-clot, but was found to consist of smooth uniform granulation. The process of healing went on for a fortnight longer. The shred of skin on the ring-finger dried up, and was cut off. Beyond a small smooth scar in the middle of the second finger, there was nothing to show that so severe an injury had occurred. In cases of deeply suppurating whitlow dressed after incision with balsam of Peru, the suppuration soon ceased, the inflammation and swelling of the parts abated, and recovery took place more rapidly than under any other mode of treatment. The Peruvian balsam appeared to Dr. Wiss to have an important effect on the mode of production of granulations, rendering the cell-growth regular, and obviating all the ill effects of continued suppuration. He regarded it also as a valuable antiseptic, which could be easily used in private practice. His observation of the power of balsam of Peru to prevent suppuration reminded him that its use had been recommended by Marcus in internal diseases, especially in chronic pulmonary catarrh. In two well-marked cases of this affection, of several years' standing, in old women, where auscultation and percussion showed the lung-tissue to be perfectly sound, and there was abundant puriform yellow expectoration, he succeeded in effecting a cure by the use of an emulsion of balsam of Peru in yolk of egg (4 parts in 120; dose, one tablespoonful every two hours). In one case recovery took place in eleven days, and in the other in three weeks; there was no return of the malady. He had previously given emetics and copaiba in these cases: under the use of the latter remedy, the quality of the expectoration had been improved, but its quantity had not been reduced.—*London Medical Record*, Jan. 15, 1875.

Iodized Phenol—A New Uterine Escharotic and Alterative.

Dr. ROBERT BATTEY, of Rome, Georgia, recommends (*Am. Practitioner*, Feb. 1877) iodized phenol as an escharotic and alterative in uterine diseases. It is prepared of two strengths.

Recipe No. I.—Take of iodine, one-half ounce; crystallized carbolic acid, one ounce. Mix, and combine the two by gentle heat.

Several years ago the writer, feeling the need of a combination which should possess not only the properties of a local escharotic, but those of a local and at the same time general alterative also, devised the above formula. The subsequent use of it has proven so satisfactory, and so many and varied forms of its application in uterine disorders have suggested themselves, and especially so favourable has been the report of gynæcological friends to whom the formula has been communicated, and who have largely tested its claims, it seems proper that it should now be put before the profession as a promising addition to our armamentarium.

When the iodized phenol has been applied to the cancerous uterus it has attacked the morbid growth with a good degree of energy, destroying the superficial layers very satisfactorily. The applications have not been at all painful when the sound parts have been carefully protected. Hemorrhage has been arrested very promptly, and during the continuance of the remedy has not returned. The fetor of the discharges has been most markedly diminished, and pain considerably allayed. So variable is the course of uterine cancer, it is difficult to determine the power of any remedy to retard its progress; but there is reason to believe that this method of treatment is possessed of some degree of potency in that direction.

The application to the cancerous surfaces is made upon lint or cotton, saturated with the remedy, and surrounded by a cotton tampon to protect the sound parts. A rather free serous discharge from the diseased surfaces usually occurs promptly after the contact of the iodized phenol, and combining with it would run down upon the healthy tissues if not restrained by a suitable absorbent. The application may be repeated in four to seven days, according to the energy of the proposed treatment. When it is desired to get rid of much fungous growth, the deadened tissue is removed by the curette, and another application made without waiting for the separation of the slough. If it be wished to mitigate the escharotic, it may be diluted with glycerine to any desired degree. In cool weather, it is necessary to warm the preparation to render it liquid for convenient saturation of the dressing. By the sacrifice of a little of its energy, it may be rendered permanently liquid by the addition of a teaspoonful or two of water to the formula.

Recipe No. II.—Take iodized phenol, one and a half ounce; crystallized carbolic acid, one ounce; water, two drachms. Mix and make solution.

This preparation has been very fully tested by the writer in a large number of cases, and in a variety of uterine disorders; *e. g.*, chronic affections of the cervix, the cervical canal and the endometrium, uterine hypertrophy and subinvolution. It has been used both in its full strength and in various degrees of dilution with glycerine; sometimes two-thirds the above strength, sometimes one-half, one-third, and even one-fourth. The strength used has been determined, first, by the mode of application proposed; second, by the energy of the effect desired; and third, by the tolerance of the patient.

Mode of Application.—In some cases it has been used of full strength, and simply painted upon the cervical mucous membrane. In other cases, the whole vaginal cervix has been freely painted over, using a camel-hair pencil. More often a bit of lint cotton has been securely twisted upon the end of Budd's elastic probe, and having been saturated with the liquid, carried up to the os internum, once or twice rotated, to bring the liquid well in contact with every part of the cervical canal, and then withdrawn. At other times the elastic probe has been armed with cotton wound around it to the size of a small uterine tent, or even a large tent, the cotton being secured by thread passed several times around it, and tied with ample ends to hang out at the vulva. The cotton was then saturated with the phenol and passed into the

cervical canal, to remain for twelve or twenty-four hours, the probe having been withdrawn. In other instances, the cotton tent has been made still longer, the internal os dilated, and the saturated tent passed fully up to the fundus, there to remain for a like period of twenty-four hours. Many times these cotton tents have been allowed to remain until they were thrown off by the uterus, which has usually occurred in thirty-six to forty-eight hours. Sometimes the cervical canal has been dilated with sponge, and the interior of the uterus mopped out with the liquid on cotton secured upon the roughened end of the new aluminum probe. The latter instrument has been found to be absolutely safe against danger of leaving the cotton behind in the uterus. In a few instances, a lock of cotton has slipped from the elastic probe while in the uterine cavity, and remained for many days. It has always been thrown off by the uterus sooner or later, and no harm has resulted.

As a rule, the full strength of the formula has been used only to coat over the surfaces treated. When the saturated cotton tent has been allowed to remain. a weaker solution was used. There have been, however, a number of exceptional cases in which the full strength of the formula has been carried into the cervical canal upon a cotton tent fully saturated, and even up to the fundus itself, and allowed to remain for twenty-four hours. In these instances, it has been a little surprising to see the treatment so well borne.

Of the immediate effects of this treatment, it may be said that the pain inflicted, even by the strongest application, is for the most part very trifling, and in quite numerous instances absolutely none at all. In this respect it presents a striking contrast to the nitrate of silver. The carbolic acid, acting as a local anæsthetic, allows us to make powerful caustic applications of the iodine with little or even no pain. In most instances of its energetic application, the patient perceives, in from three to ten minutes, a decided flavour of iodine in the mouth, thus experiencing the evidence of rapid absorption of the drug by the uterus. This is further proven by the observation that a large tent even, well saturated with the black opaque liquid, is often completely decolorized by the uterine absorption in the short space of twelve hours. In no case has any toxic effect occurred in consequence of the absorption of carbolic acid. That it is freely absorbed, along with the iodine, would seem to be proven by the fact that the odour of the acid is not to be perceived in the tent after withdrawal. The tent does not give rise to the offensive discharge which attends upon the use of sponge, nor is it itself offensive upon removal.

Of the more remote results it may be said, upon the third or fourth day, exfoliated membrane comes away in shreds or sheets, of more or less size, and in thickness corresponding somewhat to the energy of the application which has been made. Sometimes a cast of the cervical canal is seen, white in colour, and of thickness so considerable as to remind one of glove-kid. A discharge, more or less bloody, usually continues for one or two, sometimes three, days. The applications are made ordinarily three times in the intermenstrual period, rarely oftener, sometimes but one or two each month. Under the use of the iodized phenol, excoriations and ulcerations of the os quickly heal, leucorrhœa is arrested, endometritis gradually yields and disappears; the uterine hemorrhages, which so often attend upon subinvolution, are controlled, and the uterus resumes its normal size and functions.

Whatever may have been the strength of the applications, stricture of the os and cervical canal, too often an unpleasant sequel to the use of nitrate of silver, has not resulted in any case. When applied to the cervix and cervical canal, in a caustic way, the reproduced tissue is normal and not cicatricial in character. It is believed that the very free absorption of iodine by the uterus, in this method of treatment, exerts a decidedly alterative influence over the diseased organ; and more than this, the iodine thus carried into the general circulation is highly beneficial as a constitutional remedy also. It may, therefore, be confidently asserted that iodized phenol should have a place amongst our topical applications to the diseased uterus.

Medicine.

A Peculiar Sequela of Typhoid Fever.

At the meeting of the Berlin Medical Society, November 1, 1876, Professor HENOCH related the following interesting case: A girl, aged nine years, entered his wards in the Charité Hospital on December 3, 1874, and remained there until she went out cured on January 27, 1875. During the previous four weeks she had had an attack of undoubted typhoid fever; but on admission her temperature was quite normal, and remained so for days together, only once rising to 39.8° Cent., owing to the presence of abscesses on her scalp, which, however, were quite well by December 13. At this date the child's weakness and emaciation were so great that it seemed scarcely likely that she would recover. Her tongue was still coated, and there were evidences of coryza and bronchitis present. The most striking symptom was a very marked œdema of the eyelids, which, however, was proved not to depend on rénal disease, for the urine, though tested daily, never contained a trace of albumen. Still more remarkable was the discovery of a considerable amount of abdominal distension, which was proved to be due to the presence of ascites. Besides the above, there were no other morbid symptoms present, and all the organs of the body performed their functions normally. A few days later there was a good deal of œdema of the hands, while the feet always remained free from it. The child was treated with good food, red wine, and quinine, and the dropsy rapidly began to diminish. On December 8 the œdema of the hands was gone, and there was very little prominence of the abdomen remaining. On December 16 the ascites was still less marked, and in the beginning of January it had completely vanished. In his remarks on the case, Professor Henoch stated that this was the only instance of such a sequela that he had met with in a series of nearly 100 cases of typhoid fever in children. He believes that such a sequela may be due to one or more of three causes—1. To a state of anæmia or hydræmia, which would render serous transudation easier than in normal state. 2. To weakness of the heart, probably dependent on the molecular changes in its muscular fibres, which Hoffmann has proved to occur in the various organs of the body during typhoid fever. Such weakness of the heart in this case would favour stagnation of the blood in the venous system, and hence give rise to dropsy. 3. To the pressure which the so-called "cloudy swelling" of the liver-cells, which is known to occur in typhoid fever, might exert on the finest branches of the portal vein, so as to cause stagnation of blood in the peritoneal veins, and hence, in conjunction with the weakness of the heart, produce ascites. The existence of tubercular peritonitis in this case could be excluded, partly by the absence of abdominal pain, partly by the accompanying œdema of the eyelids and hands, which it would be difficult to refer to a peritoneal affection, but mainly by the fact that the child recovered, whereas Professor Henoch, at least, has never seen a case of recovery from true tubercular peritonitis.—*Med. Times and Gaz.*, Feb. 3, 1877.

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Use of Salicylic Acid in Rheumatism.

In a recent clinical lecture at the Hôtel-Dieu, Prof. SÉE dwelt on the uses of salicylic acid, which he had been using in that institution. An abstract of his remarks appears in the *Progrès Médicale*, December 16th. Salicylic acid was first employed to supersede carbolic acid for preventing putrefaction, arresting the development of bacteria, vibriones, etc., on the surface of suppurating wounds. The supposed parasitic nature of many general diseases caused some physicians to administer it internally in the eruptive fevers, typhoid fever, puerperal fever, purulent infection, erysipelas, etc.

The fall of the pulse and temperature which took place in most of the patients caused the same remedy to be given as an antipyretic in a great number of affections—pneumonia, rheumatism, etc.

As an antipyretic, the action of salicylic acid is very inferior to that of digitalis or sulphate of quinine, the fall of temperature which it produces being less pronounced and less constant. The only affection in which it has given results at present satisfactory is acute articular rheumatism.

Dr. Sée prescribes it to rheumatic patients in the form of powder, six grammes (90 grains) being divided into twelve powders: the patient taking one powder every hour. This mode of administration is preferred on account of the extremely disagreeable taste of the medicine. It may be prescribed in draught, but it must then be remembered that it is soluble in alcohol, but very slightly soluble in water. The salicylates of soda and of lime are soluble in water, but their therapeutic properties are not identical with those of salicylic acid.

Place in a test-tube a very dilute solution of perchloride of iron, add a few drops of urine from a patient who has taken salicylic acid, and a beautiful intense violet precipitate is produced. We do not know what is the violet compound resulting from this reaction; clinically, however, the proceeding is not on that account of less value for detecting the presence of the remedy in the urine. On account of this rapid elimination, the medicine must be administered in fractional doses hour by hour.

The observations collected at the Hôtel-Dieu were made on five patients. All suffered from subacute rheumatism limited to some of the larger joints. In all of them, after the second day, the pain and swelling diminished and disappeared. In one of the five the remedy was suspended on the fourth day, as he appeared to be cured, but on the following day a relapse occurred necessitating a repetition of the treatment, which produced a definite cure, or at least coincided with it. None of the patients had, either at the beginning or during the course of the treatment, any cardiac complications. Two of them presented phenomena attributed to intolerance of the remedy, continuous headache, insomnia, buzzings in the ears, etc. Dr. Sée compared these physiological phenomena with those produced by sulphate of quinine, the best medicine hitherto at our disposal against the different manifestations of rheumatism.

The strict ties which unite rheumatism with chorea, and which were demonstrated in a just measure by M. Sée, necessarily induced a trial of the salicylic acid in the treatment of the latter affection.

A patient, aged 17, affected with chorea, not severe it is true, was put under the same treatment as that of the rheumatic patients. After the second day she had headache and buzzings in the ears, then some fever, the cause of which could not be discovered, and which necessitated a suspension of all treatment. The fever fell the next day but one, and the patient's choreic movements were manifestly less intense. Was the result obtained due to the remedy employed or to an intercurrent fever? This question is one difficult to solve, and one on which Dr. Sée has not given an opinion.

In concluding the lecture, Dr. Sée remarked that though the results obtained were satisfactory, we must not therefore draw exaggerated conclusions. All the patients treated were affected with subacute rheumatism limited to a small number of joints. Before giving a final judgment, the effect of salicylic acid must be observed on patients affected with acute general articular rheumatism with considerable febrile disturbance.

This subject Dr. Sée proposes to take up and to develop, when a sufficient number of observations enable him to form an opinion of this new agent for the treatment of rheumatism.—*Lond. Med. Record*, Jan. 15, 1877.

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Cyanide of Zinc in Rheumatism.

In the *Archives Médicales Belges*, M. RIEMSLAGH makes some remarks on the use of cyanide of zinc, recently proposed in acute articular rheumatism. (See *London Medical Record*, October, 1876.) He has tried it in the hospital at Namur. The effects have appeared to be uncertain. He generally gave daily from three to five granules of one centigramme of the cyanide, and in some few cases only has he obtained any rapid amelioration; in others there was no effect. He cites one case of a subacute form with great pain where

in three days considerable amelioration was obtained. The agent diminished the nervous erethism which gave rise to the pain. One is sometimes so helpless against pain of a rheumatismal origin, that it is well to record these experiments.—*London Med. Record*, Jan. 15, 1875.

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Compensatory Hypertrophy of Right Cerebral Hemisphere.

An instance of the above has been recorded by Mr. Luys (at the meeting of the Société de Biologie of Paris). A woman, attacked with right hemiplegia, suffered for eight months from aphasia. She then somewhat suddenly recovered her speech, and died eight years afterwards from pulmonary disease. The left cerebral hemisphere exhibited a very marked wasting of the third frontal convolution; and the right hemisphere was larger than the left, weighing 115 grammes heavier. The hypertrophy was most marked in the parietal lobe, which presented two abnormal convolutions not found in ordinary brains; the third frontal gyrus was particularly enlarged. The hemisphere roughly resembled that of the sheep. M. Laborde questioned whether the hypertrophy was not simply apparent, from the atrophy of the left hemisphere; but M. Harney affirmed that examination of the brain showed clearly a very marked enlargement of the left parietal lobe. M. Ranvier inquired whether the hypertrophied convolutions had been microscopically examined. He himself had been able to make out, generally speaking, that in the normal brain the nerve elements become hypertrophied as age advances, whilst the connective tissue and the vessels remain stationary. It would be interesting to know whether increased functional activity leads to an increase in the nervous elements. In the report (*Le Progrès Méd.*) from which we quote, it is not stated whether the brain was examined microscopically or not.—*Lancet*, Jan. 13, 1877.

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Phimosis; Incoördination of Movements, with loss of Equilibrating Power; Circumcision; Recovery.

Dr. E. P. Hurd, of Newburyport, relates (*Boston Med. and Surg. Journ.*, Jan. 18, 1877) the very interesting case of a bright lad of seven years, who for several months before coming under observation had been losing strength, appetite, and flesh, and was restless and "nervous," and took but little notice of anything. Locomotor ataxia was a marked symptom, cannot coördinate his members in any act. Could not walk across the room without staggering and pitching headlong. The same want of coördination was manifested when he attempted to feed himself; he made bad work of it, and was soon forced to give it up. It seemed impossible for the will to guide the hand to the mouth. Intellect not disturbed, only the hebetude before mentioned was marked. Responded to questions in monosyllables, and speech was not very distinct. Pupils widely dilated; at times an outward and slightly upward squint of both eyeballs, from paresis, as was supposed, of the third pair of nerves. Marked dulness of hearing. No febrile heat; pulse normal. No pains complained of. Could not elicit from him whether he experienced any abnormal sensations on attempting to put his feet on the floor, or whether the tactile or muscular sense was perverted. Hyperæsthesia of general surface. Shortly after coming under treatment he had a severe fit of epileptiform type. There was no constipation or difficulty of micturition.

For upwards of a week he was treated with nervous sedatives with a view to quiet the excessive nervous irritability manifested during the night, with only partial benefit, as his general condition did not improve. One day, at an early morning visit, the patient lay naked in his mother's arms, when a glance revealed phimosis, the prepuce was greatly elongated, strangulating the glans, and the urinary punctum was minute. Circumcision was performed, and from that time steady improvement set in. Three days afterward it was noted that restlessness has abated, and there have been no more spasms. At the end of three weeks the following note was made: "The patient has nearly recovered. There has been a rapid gain in the power of coördination. Equilibration is now re-

stored; he walks slowly and feebly, but with perfect steadiness. He can feed and otherwise help himself with his hands. Pupils of eyes are natural, and there is harmony of the ocular muscles. There has been no return of spasms or convulsions, and his sleep is now good. He amuses himself all day long with his playthings, is lively and chatty, and the change in his condition is as gratifying as it is striking."

A month later it was observed that there is at times a little stiffness and awkwardness about his gait, especially perceptible when he attempts to run. He sleeps well; no nervous irritability and no spasms.

Dr. Hurd considers this a case in which the ataxia was purely functional, owing to irritation of the glandular branches of the dorsalis penis nerve, the speedy relief following circumcision demonstrating this.

Had the phimosis not been discovered, it is natural to suppose that general paralysis with dementia would have been the ultimate result.

On Athetosis.

In the *Deutsche Medicinische Wochenschrift* of Dec. 2d, Dr. BERNHARDT, of Berlin, describes a case of athetosis, and makes some observations on the subject, supplementary to a paper by him in Virchow's *Archiv* (Bd. 67, Heft. 1). O. R., male, aged 14, was the son of healthy parents; of his six brothers and sisters, three died in infancy, without having suffered from convulsions, and the other three, aged 17, 16, and 8, are healthy; his present condition was stated to have developed itself after a fit, which he had one night when 15 months old. The lad is strongly built, has stupid expression, prominent lips, and open mouth, low forehead, short head, broader behind than in front, the parietal eminences projecting pointedly. He has little intelligence, cannot read, but can form a few letters with the left hand, and has no idea of reckoning. He speaks without jerking his words, the tongue is protruded straight, and during rest the two sides of the face are equal, but as soon as the muscles begin to act, the mouth is drawn to the left; the orbicularis palpebrarum of the left side also acts more strongly and independently than the right. Sensation in the face and extremities is somewhat impaired on the right side. As the patient sits quiet, now and again a muscular twitch may be observed to pass along the right upper limb, but when this is extended the forearm becomes pronated, the hand flexed, and turned towards the ulnar side, while the digits are spread out, and involuntarily moved in all directions, especially the thumb and little finger. The hand can, however, remain still for a time if rested, say on the table; the voluntary movements of this extremity are slower, weaker, and less skilful than those of the left. In walking, the right leg drags somewhat; the left thigh is rather larger than the right, but the reverse is the case as regards the leg. When the right foot is rested up it falls into the position of equino-varus, and the toes are constantly being flexed and extended. The patient is subject to occasional fits, which occur only at night; his thoracic organs are healthy. The author points out that the above case differs from any previously recorded, in the toes being affected to a greater extent than the fingers, and notes the consequent increase in size of the muscles of the leg on the affected side. He considers athetosis, as exemplified above, and in other cases previously described by him, to be undoubtedly due to a lesion of the brain on the side opposite to that affected, and probably occurring in the white medullary matter in the neighbourhood of the optic thalamus.

Rosenbach, in a recent paper in *Virchow's Archiv*, says that the group of symptoms, known as athetosis, cannot be considered as an independent disease, but accompanies very various morbid processes. In the case, related by him, of a woman suffering from tabes dorsalis, and who, during the last two years of her life, exhibited constant movements of the fingers and toes, gray degeneration of the posterior columns of the cord was found at the autopsy.

Bernhardt has also noticed in tabic patients, purposeless and involuntary movements of the fingers, but does not consider these cases to be examples of athetosis, as originally described by Dr. Hammond, of New York, and to the

existence of which an affection of the brain, and of one side of the body, are considered to be necessary. It is, nevertheless, admitted that the existence of athetosis, as an independent disease, is still a matter for discussion.

Dr. Bernhardt's case has some points of resemblance with a series of cases described by Dr. T. Claye Shaw in vol. ix. of *St. Bartholomew's Hospital Reports*, under the name of "Athetosis, or Imbecility, with Ataxia"; the resemblance lies in the fact that the affection dates from infancy, the patient exhibits very feeble mental development, and the facial muscles are also involved. On the other hand, Dr. Shaw's patients were not epileptic, the affection was not confined to one side of the body, and the muscles of the neck were also affected; altogether, they form a clearly defined group by themselves.—*London Med. Record*, Jan. 15, 1877.

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On the Treatment of Chorea.

Dr. W. Howship Dickinson, Physician and Lecturer on Pathology at St. George's Hospital, in an interesting paper on this subject (*Lancet*, Jan. 6, 1877), says:—

In the last volume of the *Medico-Chirurgical Transactions*, I have given the results of a series of observations upon the morbid anatomy of chorea, and shown as the inference which they indicate that the disorder is not a mere accident of embolism; that the cardiac disturbance which is so often associated with the nervous is continually of later date, and obviously secondary to it; and that the disease has its rise in the nervous centres, where the first visible—not necessarily the first actual, but the first visible—change is vascular distension, closely followed by extravasation and the several tissue-changes which congestion and extravasation produce. The conclusion that chorea is primarily a nervous, and not a vascular, disorder is consistent with its relationship to other neuroses—its occurrence in the families of the epileptic and insane, and the proclivity to it which is displayed by children of nervous mobility, such as are bright, sensitive, imaginative, and timid. Added to these points of alliance with disorders of neurotic origin, we have the striking fact that a large proportion, certainly not less than a fourth, of the cases of chorea which come under our notice, owe their existence immediately to mental emotion, commonly fright, without the co-operation or concurrence of any other cause to which the attack could be attributed.

The other great cause of chorea is rheumatism; it acts with about the same frequency as fright. Of 70 cases of the disease at the Hospital for Sick Children I found that rheumatism was involved in the antecedents of 28, and in half as many was unequivocally associated with the chorea as its cause. Fright was recorded among the antecedents of 22; it was the direct, obvious, and sole exciting cause in 17. Thus chorea is to be ascribed with about equal frequency to two causes, which are so different in their nature that we can but wonder at their producing the same result. As regards the humoral source of the disorder, it is to be noted that rheumatism, when a cause of chorea, is almost always accompanied with endocarditis, so that it is open to us to attribute the chorea either to the rheumatism or to the associated cardiac affection; and hence has arisen the idea that the nervous disturbance may be but one of the results of embolism—irritation of the nervous centres by particles of fibrine swept into their vessels from the diseased valve. But this ingenious theory, based only upon rheumatic chorea, is unsuited to the other circumstances in which chorea arises, and is inconsistent, as I have endeavoured to show in the paper referred to, with pathological as well as with clinical observation.[1]

It is not my purpose now to dwell further upon the nature of chorea than

[1] As I have made reference to my own paper, it is but fair that I should point to one by Dr. Hughlings Jackson, which has been published since the accompanying sketch was written. In this the embolic view is defended with the ability and honesty which mark all the works of this author.

may bear upon the treatment of it; but a difference which on the one hand would declare nothing to be necessary for its production beyond ill-luck and a damaged valve, and on the other would give the disorder a place in the family of neuroses, with its wide pathological relationships, its large sympathies with external circumstances, and its hereditary tenure, involves distinctions which, unless we have the same treatment for everything, cannot fail to influence our practice. Shreds of fibrine which chance has directed with one person into the vessels of the spleen and kidney, with another into the cerebral or somewhat inaccessible spinal arteries, may conceivably be dissolved or acted upon by agents introduced with the blood. With diseases primarily nervous no such simple issue presents itself. If chorea were embolic and in process of production, or quite recent, we might hope much from alkalies; these salts control the endocarditis of rheumatism, and might reasonably be expected to modify its embolic consequences; but they are useless in chorea. Formerly I gave them a trial on this theory, but satisfied myself that they did only harm.

Chorea, then, as far as concerns its individuality as a disease, must be dealt with neurotically, though general is often more to the point than special treatment, as it may be needful to prevent a patient's dying of a disease before we can attempt to cure him of it. In severe and acute cases, where the patient is being worn out by incessant movement and want of sleep, liberal feeding, stimulants, and the means of procuring timely slumber—the bromides, opium, or chloral—may enable him to tide over a period of mortal peril. Next comes the use of bodily restraint. The violent and erratic movements of chorea appear to be one mode, at least, by which the exhausting effect of the disease is produced, and the improvement which follows upon their mechanical control suffices to show that some at least of that effect is due to the actual movement, while, perhaps, some may be attributed to the muscular attempt, which the bandage makes futile, but does not prevent. Added to this, restraint is important in preventing the excoriations and sores which the jactitation causes, and which may contribute perceptibly to the typhoid prostration, which is one of the worst phases of the disease. A sufficient measure of controlment may be sometimes obtained by merely tying the feet together, and firmly fixing the upper sheet. A more effective arrangement is an embankment of pillows along each side of the bed, closely adapted to the patient, who lies in the trough between. In extreme cases it may be necessary to fix the limbs with splints. A well-padded splint, such as is used in hip-disease, reaching from the axilla to the ankle, is placed along each side of the body, with the arm bandaged to the outer, and the leg to the inner aspect. The child, excepting that he can still make faces, has little more power of movement than a mummy, and resembles a Swiss baby within its encasement, which can move nothing but the eyes. Anything which causes alarm or distress is to be scrupulously avoided, but the agitation of the limbs is in itself a source of great discomfort, and any gentle means of preventing it is usually acceptable to the patient.

In less severe cases mere rest in bed will do much, and occasionally all. Chorea will almost always improve up to a certain point, sometimes to recovery, under the simple influences of rest and time. These, and now and then a purge, may be all that is needed. A word as to aperients may precede what has to be said touching special modes of treatment. Constipation belongs to several nervous disorders, of which chorea is one; it is, perhaps, rather a result of the chorea than its cause; nevertheless purging does distinct good, and sometimes is the only medicinal process needed.

Passing now from medicine in general to medicines in particular, I am bound, with regard at least to the acuter forms of the disease, to give the first place to the sulphate of zinc. This is no novelty in practice; what novelty pertains to it is the denial of its use in chorea. I believe I am not to be generally charged with therapeutical credulity, and on this point I should not have ventured to express a confident opinion, were it not that I have had more than ordinary opportunities of correcting by experience any errors into which I may have fallen. Many metals—antimony, arsenic, iron, and zinc—markedly influence the disease in question; antimony, perhaps, controls the jactitation of severe and recent chorea in the most immediate manner; but it must be

given largely to be effective, and so used it adds to the prostration of the patient, and sometimes, I believe, is the chief cause of a fatal result.

Zinc stands next in the order of efficiency. To be of use it must be given in large doses. A grain of the sulphate may be given three times a day, or in a very severe case more often, and a grain added to each dose every day until the dose amounts to between fourteen and twenty-six grains. Thus administered and sufficiently diluted, it causes no sickness nor any prominent effect but the abatement of the jactitation and grimace. A scruple or rather less is commonly a sufficient dose, but much more may be given. In an exceptionally severe case, of which the subject was a girl of seven, I gave with apparent advantage, and certainly without harm, a dose which at last reached forty-five grains three times a day, or 135 grains in the twenty-four hours. Under this the child became able to talk, feed herself, and walk, none of which she could do before. The great amount passes off by the bowels, and the metal can be recovered from the feces. I have not succeeded in finding a trace in the urine, so that probably but a small proportion is absorbed; though from the greater effect upon the nervous system of large doses than small, it is probable that the quantity absorbed bears some relation to the quantity swallowed. As touching the curative effect, it may be said that a course of treatment which lasts necessarily for a fortnight secures Time as its ally, in acute disease no unimportant auxiliary. But chorea is a disorder of indefinite duration; the zinc may be begun at any period until the acute form has merged into the chronic, and I have often been able to assure myself that recovery dated from the beginning of the remedy, and not from the beginning of the disease. I have often recognized, as I thought, an early effect of the zinc in a peculiar brightness and clearness of the complexion, to be succeeded, if the drug be long continued, by marked anæmia. It is hence often advisable to associate with the zinc an unaugmenting dose of sulphate of iron. With the subsidence of the chorea, the zinc may be gradually withdrawn, and the iron at last continued alone, or with the addition of quinine. Another salt of zinc, the valerianate, is of especial use; it is suited to cases of a less acute type than to require the sulphate, and to those by no means infrequent instances in which the attack has with it some of the characters of hysteria.

Next to the salts of zinc, and often to be preferred to them, come those of iron. Where there is evident anæmia, iron in some shape should be given from the first. Zinc does best with florid children, iron with the pallid; zinc when the symptoms are acute, iron when they are chronic. I have met with good results from the syrup of the bromide; and the valerianate, like that of zinc, may occasionally be resorted to. In the more lasting and slighter forms of the disorder, where perhaps an occasional twitch or grimace, or some awkwardness in the limbs, is its only sign, arsenic, as a nerve-tonic, in small and long-continued doses, is often of service; and a similar statement may be somewhat more emphatically made with regard to strychnia, particularly if this alkaloid be given together with iron. Thus, for the slighter and more lasting forms of the disorder, the pharmaceutical remedies are iron, arsenic, and strychnia; often iron together with one of the others. Strychnia, like iron, may be advantageously given as bromide in the liquor strychniæ bromidi.

The smaller shapes or lingering remains of chorea call, as a rule, for general tonics; and among such perhaps the most effective is change of air; there is, indeed, no disorder in which a temporary exchange of town for the country or the sea is more decidedly curative.

Where chorea is much mixed with hysteria, as we sometimes see in developing girls, the treatment must be correspondingly modified. Electricity and shower-baths are sometimes in these circumstances useful adjuncts, though with simple chorea such agitating measures could scarcely fail to be mischievous.

Regulated movements, as drilling or dancing, have been recommended. I have often suggested dancing, and thought it did good. The history, indeed, of the epidemics of dancing mania, which have been credulously traced to the bite of the tarantula, or oddly associated with the name of the Baptist—Herodias appears to have been the means of associating, in mediæval fancy, a pro-

fane amusement with the fame of that austere moralist—supplies many striking illustrations of the influence exerted upon the voluntary muscles by rhythmical sounds; not that the dancing epidemics were what we now know as chorea; they were more allied to hysteria.

I have mentioned only means of treatment which have been found to be, or thought to be, useful. I could make out a long catalogue of drugs which have been tried and abandoned. Belladonna has been liberally given without effect. The late Dr. Fuller gave to a child with chorea eighty-four grains a day of the extract, of which the purity was ascertained, and the remedy was not destructive either to the disease or to the patient. I have used Calabar bean and conia without being able to refer any beneficial result to them; and though I have seen children improve under codeia, I have not been able to assure myself that they would not have done equally well without it.

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On Hemi-anæsthesia of Cerebral Origin.

A. PITRES (*Progrès Médical*, No. 29) relates the case of a woman, aged 58, with left-sided hemiplegia, where the sensibility of the skin of the paralyzed side was in almost all respects considerably lower than that of the right side. The same was true of taste on the left half of the tongue, and of smell in the left nostril. The left eye was turned inwards, and the movements of both eyes were limited towards the left. The right eye possessed only half the acuteness of vision, and the left was even more affected. The field of vision of both eyes was limited concentrically for white, and for other colours. There was neither atrophy nor neuritis of the optic nerve present. On section, the right thalamus opticus was found to contain an ochre-coloured nodule, of the size of an almond. The nucleus caudatus was destroyed to the extent of two centimetres, and the internal capsule was also affected. The most internal portion of the corpus lenticulare was of a slightly yellowish colour, but was otherwise intact. The other parts of the brain showed no lesion.—*Lond. Med. Record*, Jan. 5, 1875.

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Death from heat Tetanus.

Staff-Surgeon Dr. MAGILL, of the Royal Dockyard, Sheerness, presents (*British and Foreign Med.-Chir. Review*, Jan. 1877) the following valuable report:—

"Charles Allen, aged 60, a stout, muscular man, was employed on the 10th of October, 1876, in Sheerness Dockyard, attending to the melting of pitch in an iron pot which was swung from the arm of a crane over a strong, clear fire, in a movable bogie, standing in an open fireplace. He had been employed in the same occupation during the last thirty years. The pot and crane and empty fireplace are similar to what may be seen in country houses, where there is neither grate nor stove. The bogie is a metal vessel, perforated with holes, such as plumbers use, but larger, being 18 inches long, 12 broad, and 12 deep.

"A fellow workmen left Allen in his usual health and spirits, attending to the pot and fire, at 12.45 o'clock, and after being absent exactly half an hour at his dinner, returned and found the crane and pot swung round to one side from the fire, and Allen enveloped in flames four feet high, lying face downwards, with his chest fairly on the bogie, his arms on each side of it, and his head and neck beyond it, against the back of the fireplace.

"It was difficult to reconcile the position of the body, as found on the bogie, with either accident or a struggle to escape from the fire.

"The body was immediately pulled from the fire, and the flames extinguished with water.

"The fleet-surgeon of the dockyard was near the spot, and saw the body within five minutes from the first alarm. Life was, of course, extinct, but what struck him, as well as the men who pulled the body off the fire, was its remarkable rigidity. When raised or turned, it moved as one solid, rigid mass, neither head nor extremities changing their relative positions when left entirely unsupported.

"All who first saw the body are unanimous as to the fact of its general rigidity, and the fixed position of the limbs when first seen by them. The body was placed on a broad wooden stretcher for removal, and on this I saw it lying. The position was similar to that of a person lying down on his face, and 'throwing his heels in the air.' The clothes were almost entirely consumed, but the parts of the body most deeply burned were the upper half of the chest, the arms, and the fronts of both thighs; in these places the skin was completely destroyed, and the muscles exposed, standing out strongly contracted. The head was drawn slightly forward, the jaws firmly closed, with the tongue caught between the teeth. The left arm was close to the side, with the elbow and wrist-joints flexed, so as to bring the hand near the axilla. The right arm was extended from the side, with the hands brought close to the side of the head. The phalangeal joints of all the fingers were strongly flexed, while the metacarpo-phalangeal joints were just the contrary, so that the hands were broadly open, while the fingers were clawed.

"The thighs were partially flexed and apart; the right one most flexed and abducted. The knee-joints were flexed to quite right angles with the thighs, so that the soles of the feet looked upwards. The right leg was most flexed, and one of the men told me he had *noticed this leg growing more flexed* while he was extinguishing the flames—a fact of importance, as indicating the *post-mortem* nature of the rigid contraction of the muscles. The penis, also, was completely retracted, its position being marked only by a series of concentric folds of integument at the upper part of the scrotum, like what is seen in a case of large scrotal hernia.

"Twenty four hours after death the rigidity had not diminished, and a coffin had to be made large enough to contain the body with the limbs still in the position in which they were found.

"The point of peculiar interest in this case, and that for which alone I have brought it under notice, is the state of rigidity in which the body was found to be even while still in flames, and before life could have been extinct many minutes. It was suggested, as a possible explanation, that the man may have had a violent fit, and, falling on the fire, was smothered or burned to death suddenly before the fit was off. But there was no symmetry in the positions of the limbs as in the contractions of a fit, and death generally relaxes spasm. Besides, a son of deceased gave evidence at the inquest that 'his father never had fits.' It, therefore, appears to me more reasonable to consider the rigidity as true rigor mortis, produced by the rapid coagulation of the muscle fibrine through the whole body by the intense heat. This explanation agrees with Dr. Richardson's views of rigor mortis, as given in an article on that subject in the 'Transactions of the St. Andrews Med. Graduates' Association,' vol. i., in which he says that 'rigor mortis will always be more quickly developed when the temperature of the day or night is high;' and 'the cause of rigor mortis is coagulation of the muscle fibrine, and the excitant of the coagulation is heat.'"
—*Original Report, by Dr. A. Magill, M.D., F.R.C.S., Staff-Surgeon, R. N.*

[Dr. Magill has here recorded the first definite case of instant rigidity from heat in the human subject. The phenomena discovered are so absolutely in accord with the facts which have been observed in physiological research, there is no occasion whatever to assume the occurrence of any kind of convulsive seizure to account for them.—B. W. Richardson.]

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Epidemic of Spurious Tetanus.

A paper describing an epidemic of this disease, for which the above is perhaps the nearest English equivalent, but which is more generally known by the French term *tétanie*, was read by M. Magnan before the Société de Biologie on November 22 (*Gazette Médicale de Paris*). The epidemic occurred at Gentilly, near Paris, in a girl's school numbering 115 pupils. The first patient, a girl aged ten years, was attacked on July 15. She is described as well developed and of habitually good health. The contraction, which was preceded by numbness, formication, and prickings of the fingers, affected the right upper

extremity. The fingers were stiff and semi-flexed; the thumb forcibly pressed against the index finger; the forearm fixed, and the muscles on its anterior surface slightly prominent. The patient complained of pain in the wrist, elbow, and sometimes in the shoulder. Considerable force was required to open the hand, and it closed immediately the force was removed. The contractions, however, were not continuous; they showed themselves at varying intervals during four days, each attack lasting from half an hour to an hour. During the intervals the limb was normal, with the exception of a feeling of discomfort and numbness. By the end of July the symptoms had disappeared. During August, a few attacks of short duration showed themselves in the right hand. In September no attack occurred. From October 15th to November 10th the right arm was again affected; the pain was greater and the attacks more prolonged and severe than before—some lasting all day. On November 11th the contraction of the arm had diminished; but the right leg was attacked, the foot being extended and slightly adducted. The symptoms continued five days, and then gradually subsided. By November 21st, she was practically well. Two other pupils were attacked in October, and two more in the beginning of November. Numerous cases then followed rapidly upon one other, so that by November 14th nineteen girls were the subject of the malady—the last eight apparently having been attacked in one day. The course of the affection in all was similar to that in the case described; but sometimes the arm alone, or one leg alone, was affected, or both legs. One case began with loss of consciousness and convulsive movements of the eyes, while in another illusions were present at the height of the disorder. The appearance of the affection produced a sort of panic in the school, and its spread was attributed to fear and involuntary imitation. The school was closed on November 15th, and after that the patients rapidly improved, and no fresh case occurred. No one in the village was attacked, and no instance of it occurred in a neighbouring boys' school of 150 pupils. One girl was under the care of M. Jules Simon, at the Children's Hospital, and improved rapidly. She was treated with galvanism and stimulating frictions. No record is given of the treatment of the other cases.—*London Med. Record*, Jan. 15, 1877.

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The Deep Injection of Chloroform for the Relief of Neuralgia.

This method, according to Dr. Bartholow, of Cincinnati, who proposed and practised it several years ago, may now be considered established as a therapeutical expedient. It has not been uniformly successful. Cases apparently favourable for the introduction of the chloroform have not been improved even. As, indeed, with almost every remedial agent, success does not invariably follow. Untoward results have been produced by the chloroform injection. The most singular misconceptions have occurred as to the method, the site at which the injection should be practised, and the kind of case to the treatment of which it is adapted.

Dr. Bartholow lays down (*Clinic*, Jan. 20, 1877) the following precise information on these points:—

1. *The Method.*—The injections consist of five to fifteen minims of chloroform, thrown into the part by a hypodermic syringe. This amount is sufficient to produce the best results. The needle is passed into the part deeply enough to reach the neighbourhood of the affected nerve. The chloroform is then injected slowly, so that it may diffuse into the tissues immediately adjacent the sheath of the nerve. The action is local and not systemic. We have heard with amazement of the subcutaneous use of chloroform, as morphia is employed. Thrown into the subcutaneous connective tissues, not only is the pain great, but there is danger of producing abscess and sloughing.

2. *The Site of Injection.*—This method is applicable only to superficial neuralgiæ. It is essential to success that chloroform reach the tissues about the trunk of the nerve. In the case of tic douloureux, the chloroform must be deposited near the foramina at which the various divisions of the nerve emerge; in the case of sciatica, about the ischiatic notch. The same rule obtains in regard to other forms of neuralgia.

3. *Theory of its Mode of Action.*—The local effect of chloroform is to produce anæsthesia and analgesia. It accomplishes this result in part by suspending the power of the nerve to transmit impressions, in part by the local swelling which acts mechanically on the nerve trunk. For the production and perception of pain it is necessary: First, that an irritation be made at the periphery; second, that end-organs exist for the reception of the painful impression; third, that conducting fibres are in a position to transmit the pain to the centres of consciousness; fourth, that these same conducting fibres are in a condition to refer outwardly the painful impression to the point at which it originated. It follows, that, when the nerve-trunk is rendered incapable of transmitting the painful impression, the pain ceases to exist, or, what is equivalent, ceases to reach the centres of conscious impressions.

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The Treatment of Spasm of the Glottis.

In the *Journal de Médecine et de Chirurgie Pratiques*, Dec. 1876, is an article, abstracted from the *Journal de Médecine Belge*. M. TORDEUS remarks that spasm of the glottis is sometimes developed from hereditary influence, and often recurs in the same individual; on the other hand some occasional causes which may give rise to it are of an avoidable nature. Thus in certain cases the cause is an irritation of the skin, the prick of a pin, the action of cold, worms in the intestine, teething, anger, or violent emotion, etc. We see them breaking out, with an attack more serious than that of stridulous laryngitis, or false croup, spasm of the glottis, accompanied by contraction of the muscles of respiration, and principally of the diaphragm; sometimes even general convulsions supervene. When we fear an attack, we must treat the verminous affection, lance the gums in teething infants, avoid all irritation of the skin, and as rickety and anæmic children are frequently attacked, must give them remedies suited to improve their general health.

Lastly, antispasmodics, and principally bromide of potassium (seven and a half grains to fifteen grains a day), are indicated under these circumstances. During the paroxysms, we should remove at once any clothing which may impede respiration, and expose the little patient to the air, at the same time dashing cold water on him. If the paroxysm be prolonged, we must use friction, and sinapisms to the limbs. Bouchut advises chloroform, which often gives remarkable results. In the cases where respiration is long in returning, we must employ artificial respiration and electricity to the chest. Unfortunately, we can scarcely ever have time to apply all these means; and the proceeding proposed by M. Charon, and first extolled by M. Henriette, appears much more practical. According to that physician, inhalations of ammonia seemed almost always successful in combating the attack. He therefore advises mothers, whose children are subject to spasm of the glottis, always to carry a bottle of ammonia about with them. M. Charon cites the case of a physician's wife who followed this advice, and whose child was always rapidly brought round from attacks of spasm by this means; but one day she had not the bottle with her, and a fatal asphyxia occurred while the mother was searching for it.—*London Med. Record*, Jan. 15, 1877.

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The Relations between Pseudo-membranous Croup and Diphtheria, and the Value of Tracheotomy in each.

At the New York Academy of Medicine, on the first of February, Dr. AUSTIN FLINT opened the discussion upon the above subject with the remark that, probably, its leading object would be to determine whether pseudo-membranous croup and diphtheria were two diseases, distinct from each other, or were essentially one and the same disease. Dr. Flint regarded them as essentially distinct diseases: 1, histologically; 2, clinically. Speaking from a histological stand-point, he was willing to concede that the local process in the two diseases did not involve any essential pathological difference. With that view, the question therefore was to be settled by clinical evidence; and the

reasons for regarding them as essentially two distinct diseases were chiefly the following:—

Pseudo-membranous croup occurred rarely except as a sporadic disease; it never prevailed epidemically.

Diphtheria prevailed as an epidemic, and was generally admitted to be a disease communicable by inoculation and by means of infectious miasm.

Pseudo-membranous croup occurred only rarely before two, and almost never after seven years of age.

Diphtheria attacked persons of all ages not infrequently.

Pseudo-membranous croup was a local disease, and the fever which attended its progress was symptomatic—the constitutional symptoms being proportionate to the amount of fever.

Diphtheria was to be regarded as an essential fever, and the local affection was its anatomical characteristic.

The question of the presence or absence of micrococci was purposely passed.

In pseudo-membranous croup death occurred by apnœa.

In diphtheria death occurred by asthenia, often without laryngeal affection.

Pseudo-membranous croup was not accompanied, both with regard to degree and extent, by an exudation within the fauces, perhaps anterior and posterior nares, as occurred in the diphtheria. The occurrence of an exudation upon the vulva, perhaps upon the anus, upon excoriated surfaces, etc., did not belong to the history of pseudo-membranous croup.

Enlargement, sometimes suppuration, of the lymphatic glands was peculiar to diphtheria. Hemorrhages did not occur in connection with pseudo-membranous croup, nor did paralyses. Regarded from a clinical standpoint, therefore, it was no more proper to consider a case of pseudo-membranous croup as one of diphtheria than to regard a case of dysentery in which there was a plastic exudation upon the mucous membrane as diphtheria.

The discussion might be brought within narrower limits by considering whether the *laryngitis* of diphtheria differed from that of pseudo-membranous croup; in other words, was the laryngitis the same in both diseases? That question was to be answered only by macroscopical and microscopical observation. To render the investigation yet more laborious, pseudo-membranous croup as a complication of diphtheria was not of infrequent occurrence, nor was the fact of such complication inconsistent with the belief that they were distinct diseases.

With reference to the value of tracheotomy in each, two questions arose:—

1. Was tracheotomy of any value in these diseases?

2. If the answer was in the affirmative, of how much value was the operation?

In answer to the first, it was maintained that some lives had been saved by the operation in pseudo-membranous croup, and the same thing could be said regarding diphtheria, although the chances of success were much less than in the former disease. It was to be regarded, therefore, as an operation having a certain value, but the amount of value was a question for secondary consideration. Dr. Flint claimed, however, that although the chance of success might be ever so small, the operation should not be withheld. It was the duty of the physician to place before the patient, or the friends of the patient, the fact that at the proper time, and under proper circumstances, tracheotomy was a means of saving life. The operation relieved suffering and contributed to euthanasia, and for that reason alone it was justifiable. The amount of value was to be determined only by trustworthy statistics showing the proportion of instances in which recovery followed its performance.

Dr. A. Jacobi continued the discussion by first referring to the question of tracheotomy. Of its value he was convinced, and out of sixty-eight cases which he had reported, twenty per centum of the lives had been saved, for he felt quite certain that that proportion would have died had not the operation been performed. He had performed the operation about two hundred times, and in deciding whether it should be resorted to had been guided by a single indication—namely, imminent suffocation. When his operations had been performed he had felt certain that no benefit was to be derived from the use of medicines. He did not ask how long the process had lasted; or how thick the membrane

was; or whether the membrane might be expectorated in a day or two; or whether it looked yellow or white or black; or whether complications were present—pneumonia, for example—but the only indication by which he had ever been guided had been imminent suffocation. It was the same indication which led one to cut the rope by which a person was suspended from the ceiling.

Pneumonia had been regarded as a complication contra-indicating the operation, but he had seen a case recover in which he was not aware that such complication was present when the operation was performed. There were some apparent contra-indications besides pneumonia, such as great enlargement of the glands about the neck, a certain septic character of the disease, local gangrene, cutaneous diphtheria, etc. Such complications certainly impaired the prognosis, but did not reduce the responsibility upon the part of the physician, which he would incur for refusing the operation. It was true that when the septic character of diphtheria was well developed, the chances of recovery were diminished. But the septic character was frequently the result of inhalation of material from the nose and pharynx, and under such circumstances the operation might be the immediate cause for improvement in the symptoms. Early age was not an objection, for one case had been reported but lately, by Dr. Winiwarter, in which the child was only ten months old, and recovered after the performance of the operation, not to speak of a number of cases under a year or two, recorded in earlier literature. There were cases in which he refused to operate, such as those in which the symptoms of exhaustion were more prominent than those of suffocation. In such cases the operation was useless and not indicated.

Dr. Jacobi then proceeded to consider some of the statements made by Dr. Flint while giving the clinical evidence which sustained the belief that diphtheria and pseudo-membranous croup were two distinct diseases. It had been stated that paralysis did not follow "croup;" but it was for the very simple reason that very few patients sick with "croup" lived until they could become paralytic. The paralysis would not appear until the apparent recovery had been established. In diphtheria the cause for the paralysis was twofold; it was either the result of the local affection involving the soft palate, or it was the result of diphtheritic affection of the nervous system, and which appeared at the end of the fourth, fifth, or sixth week, perhaps later. Patients sick with pseudo-membranous croup did not live so long, and most of them did not have sufficient exudation upon the soft palate to give rise to early paralysis. Dr. Jacobi admitted that the lymphatic glands did not become enlarged in croup as in diphtheria, but when the inflammation was confined to the laryngeal mucous membrane the laryngitis did not result in glandular swellings, for the reason that there was very much less of lymphatic connection between the larynx and the neighbouring tissues than between the nose and pharynx and such glands. The bronchial glands might become enlarged during life in a case of croup, and had been found so.

The hemorrhages which occurred in diphtheria took place only after considerable injury to the mucous membrane and submucous tissue by the deposit. Such injury did not occur so commonly in the larynx in croup, and there was no deep-seated gangrene. Thus it could not be expected that hemorrhage would occur from the larynx in croup.

It had also been claimed that there was no cutaneous complication in croup. That was true in a majority of cases; but Dr. Jacobi further stated that he had seen the wound, after tracheotomy, in cases of supposed "croup," covered within twenty-four hours with a diphtheritic exudation; and it was a fact well known that when blisters were applied in the treatment of croup the vesicated surface might become covered with a membranous exudation.

Dr. Jacobi then referred to the fact that the best histologists were unable to agree as to what was seen when examining the exudation of croup or diphtheria and the mucous membrane with which it was connected, and gave some explanation why the membrane was easily removed in some instances, while in others it was of a prominent character. Imagine that the process, whichever it might be, took place in the trachea; there the muciparous follicles were so abundant that the epithelium inevitably became elevated, lifted off, and it had been called

"croupous." When we had to deal, however, with a surface beneath which there were no such follicles, especially when covered with pavement-epithelium, as upon the margin of the epiglottis, the membrane did not prove croupous, but diphtheritic, and would not be easily removed from the surface to which it was attached. A thin membrane deposited over the margin of the epiglottis would remain for a long time, whereas in those localities abundantly supplied with muciparous follicles the membrane would be lifted up and easily removed. Upon the vocal cords no mucus was secreted; there were no lymphatics present; and the membrane, when formed, lasted for a long time: no general poisoning followed, and no glandular swellings were developed. Where different results followed one and the same diphtheritic process, it was due to difference in the anatomy of the parts in which the process was located. When the process occurred upon the tonsils, it was innocent, because there was no lymphatic connection with the remainder of the system. When it occurred in the nares where the lymphatics were abundant, glandular swellings were developed in a short time, and septic disease, because absorption took place rapidly.

Dr. Jacobi arrived at the following conclusion: That croup and diphtheria were identical processes, and yet the clinical features of the two forms of disease would differ from each other. The clinical results would differ according to the anatomy of the part affected and the general symptoms which were developed in consequence thereof. There were cases of diphtheria in which the entire blood was poisoned, and yet there were but trifling local manifestations of the disease. In such cases we should not make a parallel.

Diphtheria was a general blood disease, resulting from the inhalation in his opinion of a chemical poison. The first symptom of the disease by which it was diagnosticated was the membrane, no matter where located. As soon as the membrane was formed, there were two causes for systemic poisoning; First, the inhalation of the original poison; second, from the maceration of the mucous membrane and absorption. The entire character of the disease was changed according to the seat and extent of the membranous deposit. As an objection to the belief that the two diseases were identical, it had been urged that there was a very marked clinical difference between croup and septic diphtheria. Dr. Jacobi believed that there was a like difference in the clinical manifestations of cases of scarlet fever. We had different types of malarial fever, etc., and why not differences in the clinical histories of cases of diphtheria? There were cases of the latter disease in which no paralysis occurred and kidney lesions were not developed. Such symptoms were not a necessity to the presence of every individual case of diphtheria any more than to the presence of what is known as pseudo-membranous croup. At all events it was unscientific to classify according to clinical symptoms and not to anatomical and histological differences. Those who distinguish between "pseudo-membranous croup" and diphtheritic laryngitis, were begging the question. They postulated differences as essential, which were but casual and clinical.

Dr. J. Lewis Smith favoured the duality of these two forms of laryngitis, and based his conclusions upon the following considerations:—

First. The cause. Croup is due to the ordinary cause of inflammation, namely, "taking cold," and is therefore universal (Steiner and others). The cause of diphtheria is a subtle poison.

Second. With regard to anatomical characters. Upon that point Dr. Smith remarked that he did not believe it possible to diagnosticate membranous croup, at the bedside, from diphtheritic laryngitis, in a locality where diphtheria prevailed. It was his opinion that there were cases of diphtheritic laryngitis in which there was no pseudo-membrane upon the fauces and but little tumefaction at the angles of the jaw. Some of those cases would be called croup; but the records had shown that persons exposed to such patients were often seized with the usual form of diphtheria, and without any other exposure. As evidence upon the anatomical characters of croup, the views of Rokitansky were quoted, because he had had the opportunity of studying the disease in a locality where diphtheria had not prevailed. Allusion was also made to the views of Rindfleisch and others, and the following conclusions given:—

1. Any mucous surface might be the seat of croupous inflammation; but the most common location was the air-passages, and it occurred most frequently in childhood.

2. Croupous membranes consisted of altered epithelial cells held together by a protein substance. The exact chemical characters of the changes which occurred in the epithelial cells had not been ascertained. No chemical tests were known which would detect the qualitative difference, if any existed, between the exudations of diphtheria and croup.

3. The laryngitis of croup, as compared with diphtheria, appeared to be more superficial. We have seen from Rokitansky's statement, that the croupous exudation never penetrates the mucous membrane underneath. On the other hand, in three instances, recently, competent microscopists had examined, for Dr. Smith, the exudation in the larynx, in cases of diphtheritic laryngitis, and in all, the exudation penetrated and was blended with the mucous membrane, while in the trachea it was entirely distinct from the mucous surface.

4. Croup was a transient inflammation, its cause operating only for a brief period. Therefore the pseudo-membrane of croup is less likely to be reproduced than that of diphtheritic laryngitis. Rindfleisch says it never is reproduced, and we all know how quickly that of diphtheria is restored.

Mention was made of another anatomical fact, namely, disease of the kidney. In several cases of diphtheritic laryngitis he had found albuminuria from nephritis. In croup the urine was sometimes found to be albuminous—but albuminous, it was thought, only in those cases in which there was a passive congestion of internal organs, due to impeded respiration. The following clinical facts were noted as having led the doctor to embrace the doctrine of quality with reference to these diseases:—

1. Croup was a local malady. Inflammatory diseases from non-specific causes are local, and why not croup? Systemic infection resulted only from the entrance or retention of some noxious principle, and there is no evidence that this occurs in croup.

2. In croup there was a single tract of continuous inflammatory exudation. If it was a systematic disease, we should expect to find, in some instances at least, the characteristic exudation upon some other surface than that of the air-passages.

3. The depression present in cases of diphtheria was lacking in croup. If croup was a constitutional disease, there should be symptoms of blood change after the malady had ceased.

4. Tolerance of depressing remedies indicated the local nature of croup.

On the other hand, Dr. Smith believed that diphtheria was constitutional at the very commencement, and that the local inflammations which occurred were simply manifestations of a blood disease. His opinion was based upon the following data:—

1. The long incubative period in certain instances. A week might elapse, after exposure, before symptoms of diphtheria commenced.

2. Severe constitutional symptoms, lasting for a shorter or longer period—perhaps for twelve hours—might be present before the appearance of the usual inflammation.

3. Early and repeated local treatment of the inflammation did not prevent the occurrence of symptoms of blood poisoning in all cases of severe type. Local treatment was to be used to prevent septic poisoning, but did not prevent diphtheritic systemic poisoning.

4. The state of the kidneys afforded evidence of constitutional malady. In certain cases of diphtheria the urine was albuminous, as soon as any of it could be obtained. That was regarded as a strong argument in favour of diphtheria being primarily a constitutional disease, whether the local manifestation was a pharyngitis, for the poison penetrates the system before it reaches the kidneys.

5. Diphtheria occurred at a very early age. True croup, it was believed, did not occur under the age of six or eight months—for the most part not under eighteen months; and it did not occur, as a rule, after sixteen years of age.

The question of contagiousness was regarded as important, and the fact that

one was contagious and the other not was held to be strong evidence that the two affections were distinct.

Dr. Smith derived an argument from the records of the Board of Health of the city of New York in favour of the opinion that croup and diphtheria were two distinct diseases.

The statistics, during the long period from 1804, when the tables were first prepared, up to 1850, furnished no recorded death from diphtheria; but deaths from croup were recorded very frequently, being not less than sixty annually—the number in 1817—and averaging one hundred and forty-seven annually during the forty-six years. Now if the croup of that period was identical with diphtheria, as diphtheria was not recognized, would there not have been a larger number of deaths annually from pseudo-membranous pharyngitis than from croup, since, in a majority of those who died from diphtheria, pharyngitis was the prominent inflammation? But the fact was, that during those forty-six years all the inflammatory maladies of the throat were grouped under one head, and their aggregate was only about one-fifth as large as the number of fatal cases of croup. Did not that fact afford strong argument in support of the belief that the croup of that period was not a form of diphtheria, but was distinct from that malady?—*Medical Record*, Feb. 17, 1877.

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Thoracentesis.

Dr. Beverley Robinson, of New York, in an elaborate inquiry into the causes which have produced sudden death after thoracentesis (*Med. Record*, Jan. 27 and Feb. 3, 1877), concludes, that, *in all cases of pleuritis in which fluid is present, we should without hesitation make use of the aspirator to withdraw the morbid effusion.*

To this law he only affixes *one* limitation and *one* exception.

The limitation is: Whenever very large or excessive quantities of fluid are present, it is wiser to puncture the chest on two successive occasions, so that all risk of acute œdema of the lung on the affected side shall be avoided.

The exception is: If the patient be very much enfeebled and the effusion be small or moderate, we may with advantage delay the operation, during a brief period, until his forces have been somewhat re-established.

By proceeding after this manner, all danger of *fatal syncope*[1] will be obviated.

Meanwhile, of course, if the effusion, from small or moderate, rapidly becomes large or excessive, the formal and imperative indication is to operate as soon as possible.

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Chronic Pneumonia of the Apex in Children.

The difficulty in recognizing this disease is well known. Dr. L. Fleischmann (*Wiener Medicin Presse*, Dec. 20, 1876) gives the following symptoms observed in teething children.

1. Unilateral swelling of the lymphatic glands of the throat, of the back of the neck, or of the submaxillary region, when other local causes, such as pharyngitis, parotitis, alveolar inflammation, and diphtheria, can be excluded, causes strong suspicion that there is pneumonia of the apex of same side. The glandular swelling continues while the process in the lung is active, and ceases when the lung infiltrations become stationary, the glands swelling and subsiding again with each advance of the inflammation.

2. Certain obstinate forms of conjunctivitis which, in spite of all treatment and without apparent cause, return from time to time with great severity, if

[1] In syncopal states there is anæmia of the brain, which is often successfully treated by placing the patient flat on his back. In view of this fact Marrotte (*Gazette Méd. de Paris*, May 13, 1876) has recommended to operate while the patient is in a half reclining or completely recumbent posture, so that there may be less predisposition to this condition. This practice seems to me judicious.

but one and always the same eye be attacked, point with great probability to disease of the lung of the same side.

3. Eczema of one-half of the face or head, which heals with difficulty and frequently occurs, sometimes alternating with or accompanied by ophthalmia of the same side, should lead to examination of the lungs, where pneumonia of the apex of the same side is often present.

4. Certain sympathetic disturbances of the one side of the face or head, having frequent changes in colour, from flushing to pallor: transitory circumscribed erythema of the cheek or temple, always on the same side with pneumonia (the easy production of Trousseau's maculæ, which also accompany meningitis, cerebral tumours and other diseases being excluded) often indicate pneumonia of the apex of the same side.

5. Intermittent sympathetic neurosis affecting one side of the head, characterized by redness and elevation of the temperature of the skin of the affected side, is often observed in children with lung-infiltration of the same side.

6. Finally neuralgia of the trigeminus, oculo-motor, and vagus nerves occurred and disappeared during the process in the lung of the same side in such a manner that no certain relation between the two could be determined. These symptoms were observed in so many cases, that the author regards them as reliable.—*London Med. Record*, Jan. 15, 1877.

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On Epithelioma of the Lung.

MALASSEZ (*Archives de Physiologie*, Aug.) describes a case of primary encephaloid cancer of the lung, in which the primitive lesion consisted of a distinctly epithelial new formation growing on the walls of the pulmonary alveoli, in such a manner that the respiratory cavities were transformed into mucous cysts. Some of the cells of the new growth had the appearance of normal adult cells, typical cylindrical epithelium; others were in various abnormal forms, which might be considered as cells which were in a condition of proliferation, or on their way to perfect development. The growth was distributed throughout the lung-tissue in masses which correspond to lobules or groups of lobules, thus forming more or less isolated tumours of various sizes. The disease appeared to spread itself in two distinct ways, first, by the route of the deeper lymphatics and the bronchial glands; and, secondly, by means of the superficial lymphatics and the pleura. In different parts of the lung two varieties of tumours would be distinguished; one composed of cavities lined with typical epithelial cells, and little proliferation of connective tissue (epithelioma mucoides), the other consisting of spaces tightly filled with cells; more or less differing from normal adult epithelium. These latter, which were regarded as secondary deposits, presented all the characters of typical carcinoma.—*London Med. Record*, Jan. 15, 1877.

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On the Different Forms of Cirrhosis of the Liver.

The following is a short *résumé* of the propositions laid down by CHARCOT and GOMBAULT, which are supported in their paper by various experimental, clinical, and pathologico-anatomical observations (*Archives de Physiologie*, September and October, 1876).

From a purely anatomical point of view, they say three types of cirrhosis of the liver may be defined.

1. The connective tissue new formation commences in the interlobular spaces, where it forms at first islands of liver-substance; it soon invades each lobule individually, and destroys it systematically from its periphery to its centre. This occurs consecutively to a lesion of the bile-ducts, and to this type belongs, amongst others, that form recently described by Hanot (*Thèse inaugurale*, 1875) as hypertrophic cirrhosis with chronic jaundice.

2. The connective tissue forms rings which at first circumscribe together a more or less considerable number of lobules; this connective tissue, by its tendency to contract, compresses and causes atrophy of the substance of the

lobules, but does not invade them. This form is essentially perilobular, and has its origin around the portal vein. To it belongs the ordinary granular cirrhosis of Laennec (the hobnailed liver).

3. The new formation invades the whole liver at once, and in the depth of its tissues; the cirrhosis is here from the first both intralobular and extralobular; it disintegrates the liver-substance cell by cell. Though the authors cannot altogether collate the anatomical facts with the clinical phenomena in this affection, MM. Cornil and Ranvier, as well as M. Parrot, have found it in cases of infantile syphilis.—*London Med. Record*, Jan. 15, 1875.

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On Abscess of the Liver Mistaken for Empyema; Thoracentesis.

Dr. PABIS relates, in the *Giornale di Medicina Militaire* for September, the case of a soldier who was admitted to hospital with an abscess on the left trochanteric region. He had been healthy, but three years before admission had received a gunshot wound in the right hypochondriac region which confined him to bed for six weeks: at this point was an irregular cicatrix, adherent to the subjacent muscular tissue. The abscess having been opened, the resulting wound, in spite of energetic local treatment, extended and assumed a fungous aspect, the edges became undermined, and sinuses were formed. Under local and constitutional treatment, the wound healed in about two and a half months. After having remained some time in a favourable condition, the patient was attacked with fever preceded by rigors, troublesome dry cough, dyspnœa, and a stabbing pain in the right mammary region. Inflammation of the right pleura was diagnosed; leeches were applied, afterwards a blister, and repeated doses of quinine were given. The patient, however, grew worse, and, at the end of a month, presented the following symptoms: he had severe dyspnœa. The pectoral fremitus was completely abolished. There was complete dulness of the right chest anteriorly and laterally as high as the third rib, and from this part to the subclavicular fossa there was tympanitic resonance. The right side of the chest was distended, the greater convexity being at the lower and lateral part; the intercostal spaces were dilated and prominent. Posteriorly and above, resonance was more extensive, and bronchial breath-sound was heard in the supraspinous and infraspinous regions. The heart was displaced to the left and upwards.

Thoracentesis was performed, an incision being made along the posterior axillary line of the right intercostal space, where fluctuation was perceived. About two kilogrammes (more than four pints) of very fetid ichorous pus, mixed with detritus of tissue, escaped. No relief, however, was obtained; the disturbance of respiration remained, and the fever continued intense. Death took place five days after the operation. At the necropsy, the left side of the chest as high as the third rib was found to be occupied by the liver, which pushed the diaphragm upwards and against the wall of the chest. The right lung was collapsed, displaced upwards and inwards, and at its base was adherent to the diaphragm. The liver, which was enormously enlarged, had on its convex surface a vast abscess, containing pus of the worst quality; the liver-tissue beneath had undergone fatty degeneration, and contained two other abscesses. The diaphragm presented, at the point corresponding to the incision in the chest-wall, the puncture made by the bistoury.—*London Med. Record*, Jan. 15, 1877.

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On the Urine in Melanosis.

The black colour of the urine in cases of melanotic disease has been often noticed, but opinions are still much divided as to the nature and origin of the pigment excreted. Dr. F. GANGHOFNER and Professor ALFRED PRIBRAM (*Prager Vierteljahrsrchift*, vol. CXXX., and *Dublin Medical Journal*) observed a case in which the urine presented the following appearances. It was of a yellowish-brown colour, deposited a sediment of lithates, contained neither albumen nor sugar. When treated with hydrochloric acid it became dark

brown; this colour was unaffected by the further addition of a drop of solution of chloride of calcium, but several drops destroyed the colour. The urine, which when freshly passed had a yellow colour, on standing became darker, and finally as black as ink. If the urine which had not yet become dark were treated with a dilute solution of bichromate of potash, to which some sulphuric acid had been added, there immediately formed in it a black cloudiness, and by degrees it became intensely black. Boiling with chlorate of potash, nitric acid, or other oxidizing agents, also produced the blackening. If, to the filtered urine, distilled water were added until its colour was the same as that of another specimen of urine which was rich in indican and of a wine-yellow colour, the colour of the two specimens was equal when hydrochloric acid was added. A drop of chloride of calcium produced no alteration; an excess destroyed the colour. The patient was a woman fifty-two years of age. The disease began by the degeneration of a pigmented mole on the leg, and lasted about a year. Numerous metastases occurred both in the superficial and the deep parts. The particulars of the case during life and the pathological appearances are very fully given. The authors discuss, at great length, the various opinions that have been put forward as to the origin of the pigment in the growths, its relation to that passed in the urine, and the chemical and physiological characters of the latter. The following are the conclusions at which they arrive: 1. The urine of patients suffering from melanotic carcinoma contains sometimes a chromogen, which, on the addition of oxidizing agents, as well as on standing in contact with the air, becomes of an intensely black colour. 2. Even while the melanotic growths are extending, the chromogen may transitorily diminish to such a degree that it can no longer be detected by the ordinary reactions. 3. The relative quantity of the chromogen, and, consequently, the intensity of the reaction, varies inversely with the quantity of urine passed in twenty-four hours—*i. e.*, with the quantity of urinary water. 4. But it varies directly with the specific gravity—*i. e.* with the quantity of solid ingredients. 5. The abundance of chromogen is independent (*a*) of temperature-fever; (*b*) of impediments to respiration; (*c*) of the quantity and quality of the feces passed, hence no relation to the function of the intestine is discoverable. 6. Besides the chromogen, the urine of the case in question contained a considerable percentage increase of indican. 7. The presence of the chromogen obscured the simple indigo reaction with hydrochloric acid and chloride of lime, but after the precipitation of the chromogen this became distinct. 8. It is uncertain whether the chromogen excreted with the urine in melanotic carcinoma is a special pigment or one of the usual urinary pigments in greatly-increased quantity. The former view is, however, the more probable, for—9. From the urine in question a pigment could be obtained which differed markedly from the known black urinary colouring matters, in its great resistance to the ordinary solvents of the latter.—*London Med. Record*, Jan. 15, 1877.

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Case of slowly advancing Sclerema attended by Cardiac and Gastric Disorders.

At a late meeting of the Royal Medical and Chirurgical Society Dr. John Harley read an interesting paper on this subject, of which the following is an abstract:—

The patient has been under the author's observation for nearly five years. He is a man of fair complexion, and of rather feeble constitution. He is in his fiftieth year, and a stonemason by trade. He was obliged to give up work in February, 1872, and applied to the author a month later. Then he was unable to close the hands on account of induration of the subcutaneous tissue. The fingers were of normal size, hard like wood, dusky, very cold, and moist. The induration was marked around the wrists, so as to reduce the movements of the joints to a minimum and render them painful. The rotatory movements of the forearms were reduced to one-half. The induration gradually subsided at a little distance below the elbow. The temperature of the fingers was

usually from 3° to 5° only above that of the external air. Touch was but very slightly if at all diminished. From the first there has been a tendency to gangrene at the extreme tips of the fingers. During the progress of the case the face gradually lost power of expression, the mobility of the skin, especially over the malar bones and forehead, decreased, and the subcutaneous tissue became firmer. The affection spread over the neck and upper part of the chest, and the aponeurosis of the external oblique became hard and unyielding. The characteristic features of the disease are best displayed on the neck. The skin in front forms a thin, hard, rigid plane, gathered into vertical ridges, feeling like knotted cords, and complete extension of the head is prevented. The skin is drawn very tightly over the upper part of the chest. The sides and back of the neck are mottled red and white, with what may be regarded as interrupted lineæ atrophicæ, forming regularly arranged areolæ, measuring from half to three lines in width. The pink areolæ exhibit to the naked eye ramifications of minute bloodvessels, such as are seen in this locality in persons much exposed to the weather; the extremities of these vessels terminate abruptly in the margins of the colourless areolæ. These latter are of ivory-like whiteness and opacity, and usually are absolutely bloodless. The skin of the affected part retains, as far as can be ascertained, its normal degree of sensitiveness. Apart from wasting of the muscles from want of use, and excepting the cutaneous muscles, the muscular system is free from disease. The course of the disease has been marked by increasing debility, and the patient has for the last two years experienced attacks of pain in the cardiac and epigastric region, attended with flatulency and ending in retching and vomiting of sour or bitter fluid. The pulse began to intermit, and at times the intermission was so regular that, with a regular radial pulse of 40 to 42, there were just double the number of cardiac systoles, every other one being too feeble to reach the wrist; and occasionally the secondary beats disappeared from the heart, which then beat in unison with the pulse 40 to 42 times a minute. Some days the pulse is regular, other days very irregular. Associated with the stomach derangement he is liable to attacks of palpitation, and sometimes of extreme faintness. The patient is at present weakly, ill-nourished, and seems anæmic. After slight exertion he "feels faint, as if he had no breath at all," and slight prolapse of the mucous membrane of the bowel, with a little mucous discharge, comes on. He is liable to profuse perspirations. The lungs and kidneys are normal. The author, drawing attention to the condition of the skin of the neck, and to cases in which the subcutaneous tissue of the palm becomes slowly adherent as a depressed, hard, tucked-in cicatrix—a condition which exists in the patient himself—concludes that the sclerema is merely the direct result of atrophy *pari passu* of the bloodvessels and of the lacunæ and canaliculi of the connective tissue, converting thereby the soft, moist, open, and well-nourished network into a hard, comparatively dry, close, and ill-nourished tendinous tissue. The atrophy he believes to be due to depression of sympathetic (vaso-motor) nerve power; that the functional disturbance of the heart and stomach is due to the same cause; in a word, that the case above described is one of slowly advancing paralysis of the sympathetic system of nerves generally, and that the affection is manifested at the periphery by the atrophy of the connective tissue, and nearer the centre by the grave disturbance of the circulating and digestive functions.—*Lancet*, January 27, 1877.

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Sand-Frictions in Cutaneous Diseases.

Under the above title, Dr. ELLINGER, of Stuttgart (*Wien. Med. Woch.*, No. 45), describes a practice he has followed with great success in certain diseases of the skin. Having occasion to seek for some additional remedy in treating two cases of acne of the face in young persons, he employed for this purpose white sand, and in the course of ten or twelve days the skin became clean and smooth, and has so continued since. Recommending the practice to others, he received such confirmation of its good effects that he gave it a trial in various other slight but obstinate cutaneous affections. In *ephelis* he found the effects

longer in being produced, but very satisfactory; and in a case of *pityriasis versicolor* the scales disappeared in a few days, the skin losing all its roughness a week later. In a case of *acne rosacea* affecting the chin and cheeks of a girl, after six weeks' frictions the eruptions disappeared, leaving the skin smooth and white. In other cases of *psoriasis palmaris*, *lichen albus* and *prurigo* occurring in young persons, the sand proved equally efficacious.

The selection of the sand to be employed is of importance, for while large granules are obviously unsuitable, yet a too large proportion of mere dust renders the frictions of no avail. It should be so sifted as to separate for use granules the size of a half or whole poppy-seed. Two kinds may indeed be prepared, a finer for the tender skin of the face, and a coarser for the trunk and extremities. In eruptions of the face, the skin before bedtime should first be washed with soap and water, and allowed to remain moist. In about half an hour after, some moistened sand should be rubbed into the affected parts for a short time, according to the tolerance and the necessity of the case. Any portion of the sand that adheres should be washed off with a sponge, or, better still, brushed off. In eruptions that only occupy a limited portion of the trunk or limbs, wherever it is possible, a Priesnitz compress should be first applied to the parts, and the sand rubbed in when they have thus become softened, they being afterwards cleansed by a sponge or brush. When large portions of the body are occupied by the eruption, baths prolonged for one or two hours should precede washing with soap and the application of the sand.

With all his patients Dr. Ellinger has made no change in their mode of life, and has abstained from administering medicine, whether internally or externally. For those who prefer everything to smell of the apothecary, he has sometimes added a little oil of thyme to the sand; and of late he has used a paste made of sand, carbonate of potash (one part to five), and water, which seems to have some advantage over the simple sand. He strongly recommends this also to clinical teachers and prosectors for cleansing the hands. He also thinks sand-friction of importance as a means of keeping the skin in a healthy state—a fact, indeed, that may be demonstrated microscopically by comparing the water of a bath in which sand has thus been used with that of one in which it has not been employed. The frictions are, too, especially indicated in severe internal chronic diseases, with relaxed, inactive skin—*seborrhœa tabescentum;* and they might probably be advantageously substituted, using coarse sand, for the severe procedures recommended lately by Dr. Hebra, jun., in the treatment of lupus and other ulcers.—*Med. Times and Gazette*, Jan. 13, 1877.

Surgery.

Cure of Traumatic Tetanus by Chloral.

In the *Journal de Médecine et de Chirurgie Pratiques* for December, 1876, Dr Vilaplana, of Santa Coloma, Spain, reports the following remarkable case of tetanus cured by chloral. In the month of September last, I had under my care a patient suffering from a slight wound of the left great toe. After twenty days, an attack of tetanus supervened. I saw him the following day. Trismus was extremely marked, and deglutition was very difficult. There was emprosthotonos, and he complained of severe pains down the vertebral column. I prescribed 10 grammes of chloral in 600 grammes of "eau sucrée," to be taken in twenty-four hours. The amelioration was rapid, but a complete succession of symptoms did not take place until the third day. The quantity of chloral was reduced to 8 grammes, and progressively decreased on the succeeding days. On the nineteenth day he took only 3 grammes. I continued this dose for three days, and then, considering the cure to be complete, I ceased all treatment. The patient suffered from obstinate constipation, which I treated

by three pills of extract of belladonna, of one centigramme, which I gave him in two days.—*London Med. Record*, January 15, 1877.

On Glioma of the Retina.

MM. Warlomont and Dewez state (*Annales d'Oculistique*, Juillet, Août, 1876) that, according to recent researches, there is but one neoplasma, viz., glioma, capable of being developed in the retina. Anatomically, this neoplasm consists of a number of small nucleated corpuscles, resembling somewhat those of the granular layer of the retina, and imbedded in a very scanty amorphous stroma. Glioma in the retina, as in the brain, is developed not from the nervous elements of the structure in which it arises, but from the neuroglia and at the expense of connective-tissue elements. Retinal glioma constitutes at first a purely local affection, but finally causes death, after spreading not only by local propagation to the choroid, the optic nerve, the orbit, and the cranial cavity, but also by metastasis to the lymphatic glands, liver, kidney, and bones. The cranial contents become sooner or later affected through propagation of the disease along the optic nerve, or through destruction of the walls of the orbit, or through the development of metastatic foci in the diploe and under the periosteum of the cranial bones, and in the substance of the brain itself. The primary growth after filling the interior of the eyeball protrudes in front through a perforation of the cornea, sometimes, though much less frequently, through the sclerotic, and forms a large fungous tumour.

It has been calculated by Dr. Landsberg, of Berlin, that the proportion of cases of glioma to cases of all other affections of the eye is as 1 to 1937.

The authors, in describing the clinical history of glioma, note three periods in the development of the disease. In the first period the external form of the eye is unaltered, and the patient is able to see through the cornea and pupil. In the second period the form of the eye has undergone change; the organ is much enlarged and seems ready to burst. In the third stage, that of fungous protrusion, the eye is completely destroyed. The first period is not generally accompanied by pain or external inflammation. In some few cases, however, the first symptom that is observed is inflammation of the eye, with epiphora and cephalalgia. Occasionally strabismus is the first symptom that attracts attention. Vision is completely lost from the first. It sometimes happens that this affection is treated for months as an ophthalmia without any suspicion being entertained as to the true nature of the case. In the early stage of glioma of the retina, the iris loses its natural colour; behind the slightly irregular, immovable, and dilated pupil a white or yellowish-red reflection may be observed; and the bottom of the eye, when illuminated by a light not very intense, resembles that of a cat or sheep. On ophthalmoscopic examination, there may be seen at the fundus a circumscribed prominence of the retina, of a light-yellow or bright-white colour, and traversed on its surface by numerous vessels which take a tortuous course. This prominence is not usually smooth, but in the majority of instances presents an irregularly lobed surface.

In the second stage, during which the growth advances from the fundus to the cornea, the eyeball becomes fixed in the orbit, increases in size, loses its rounded and regular form, and, in consequence of the yielding here and there of the sclerotic, presents several prominences on its surface. These changes are associated with some pain in the eyeball, epiphora, conjunctivitis, and chemosis. The patient is troubled also by violent attacks of pain in the forehead and back of the neck; these are more intense in the night than in the day, and by involving the head may determine delirium.

The third stage is that of fungous protrusion, this usually terminating in an attack of coma, or of convulsions, by which the patient, much exhausted through hemorrhages and hectic fever, is carried off. The duration of the disease is variable; in some cases it lasts but for a few weeks, in other cases for several years. Its progress is less rapid in adults than in infants. The second and third periods are usually more rapid than the first.

Glioma of the retina is observed more frequently in children than in adults.

The subjects of twenty out of twenty-four cases collected by Mr. Warlomont were under the age of twelve years. In the majority of cases, the subject is between the ages of two and four years. The disease has been observed within a few months after birth, and, in one case, in an infant of nine weeks. The mother of this child had noticed the disease six weeks previously, so probably in this case it was congenital. The infants who succumb to glioma of the retina have generally a well-marked scrofulous temperament, or belong to scrofulous families. In many of the reported cases there is a history of a blow on the eye having preceded and apparently excited the disease. It may be assumed, however, that the early loss of vision due to the latent disease renders the patient more liable to such an injury. An examination of the eye for the purpose of making out the supposed results of this injury will reveal signs of the disease which had previously existed without attracting attention.

The correct diagnosis of glioma at an early stage is of importance. When the disease is circumscribed and has not yet involved much of the optic nerve, enucleation of the globe may be practised with good chances of permanent success. The determination of the nature of the disease is seldom attended with difficulty. The only affections with which it can be confounded are these: detachment of the retina, the results of parenchymatous choroiditis, subretinal cysticercus, the results of suppurative hyalitis. Detachment of the retina is hardly ever observed in infancy. The prominence is smooth, and of a gray or opal colour, and the vessels which traverse its surface present the normal conditions of the vessels observed at the fundus of the eyeball; they are neither more nor less numerous than those of the healthy retina, as they follow almost the same track. Glioma in its earliest stage is never associated with cerebral symptoms, ocular tension, and synochia, which phenomena are, as a rule, associated with parenchymatous choroiditis. According to Knapp, there is on solar illumination of the fundus a grayish-white reflection with the latter affection, and a bright-yellow reflection with glioma. In cases of subretinal cysticercus and of old suppurative hyalitis due to the presence of a foreign body, the bright-yellow or coppery reflection observed on heliostatic illumination of the gliomatous eye is always absent. Besides, cysticercus is never met with in the infant, and in cases of suppurative hyalitis there is always a history of injury.

The only treatment of glioma of the retina is extirpation of the eyeball. This operation, when practised in good time, offers such chances of success that the surgeon is hardly justified in refusing to undertake it. When it is done, whether early or late, the optic nerve should be divided as far as possible from the globe. The results hitherto obtained from this practice have not been discouraging.—*British and Foreign Med.-Chir. Review*, Jan. 1877.

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Psoriasis of the Tongue.

There having recently been some discussions on this affection, M. Devergie, believing that some of the views put forth are erroneous, communicates (*Union Méd.*, No. 153) the results of his abundant experience. In the first place, he believes that the affection is erroneously named, from a fancied analogy to psoriasis of the skin. This last is characterized by two signs—viz., the thickening or chronic inflammation of the skin, and the production or secretion of an epidermis that is more or less adherent. In those cases in which the skin does not seem affected in consequence of the epidermal production which covers it, if the epidermis be detached by means of a cataplasm, the more or less inflamed state of the skin which it concealed is exhibited. In the so-called psoriasis of the tongue there is no trace whatever of inflammation around the white opaline spot, nor is there, at least in simple cases, any other induration of tissue than that which is caused by the thickened epithelium. Moreover, these epithelial spots of the tongue may in some cases go on to ulceration, which is never the case with the cutaneous affection. M. Devergie therefore prefers designating the disease—which is, in fact, a special affection of the epithelium—as "white epithelial patches of the tongue." Of their nature he is entirely ignorant; but

he is most disposed to regard them as one of the consequences of mercurial treatment, so often has he met with them in persons who have used or abused mercury, and especially large doses of the proto-iodide. Another common coincidence is to find the affection in persons who smoke excessively; but here he regards the tobacco as only the determining and accidental cause, mercury being the principal one.

The affection usually manifests itself first as a small white, milky patch from one-half to one centimetre in diameter; no inflammation being present either at the circumference of the patch or in the substance of the tissues. There is little or no pain or tenderness, and little inconvenience is caused to the patient, except when eating. So slow is the progress of the affection frequently, that patients sometimes pass six or seven years without seeking advice. It is found usually at the sides of the tongue, and in the under part of the organ, in the vicinity of the dental arch of the lower jaw; so that the patient, if he have a bad tooth, is apt to attribute it to the irritation which that produces. If, however, these patches make but very slow progress in the generality of cases, in others they run a more rapid course, so as soon to pass into a state of ulceration. They are then usually situated on the dorsal surface of the tongue, near one of its edges.

M. Devergie finds the affection very amenable to a caustic application, which he prepares in the following way: Four parts of powdered crystallized proto-nitrate of mercury are dissolved in eight of distilled water, which is then gradually brought to the boiling point. It is then removed from the fire, and two parts of nitric acid are added drop by drop, stirring the while. Every three or four days the patches are to be lightly touched with this, the patient keeping his tongue motionless for two or three minutes, and then repeatedly gargling the mouth with water. Three or four applications usually suffice to disperse the patches. When ulcerations are present, it is surprising to observe how rapidly they are cured; but more time and a greater number of applications are then required. Gargles of chlorate of potash should also then be used daily.—*Med. Times and Gaz.*, Jan. 20, 1877.

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Injection of Hydrochlorate of Morphia in the Tissue of the Tongue in Cancer.

In one of his recent clinical lectures, M. Gosselin (*Journal de Médecine et de Chirurgie Pratiques*, Dec. 1876) insisted on the value of hypodermic injections in cancerous patients who suffer sometimes such cruel pain. Unfortunately, we know that the calmative power of opiates is rapidly exhausted, so that, as a general rule, when a cancerous patient is likely to live some time, it is prudent at first to exhaust the list of other calmative substances. Chloral in particular may be employed at first with advantage. On coming to opiates, we may employ hydrochlorate of morphia by subcutaneous injection; and we shall be obliged to gradually increase it, and even to arrive at the enormous doses of five or six grains daily.

M. Gosselin has had a patient suffering from cancer of the tongue for two years under his care, and has had recourse to a means which he greatly recommends. Instead of making the injections in some part of the skin he has made them in the diseased organ, the tongue itself, but in the healthy parts, and always on the side of the back of the tongue. The relief obtained has been much more complete, and more rapid. M. Gosselin has confirmed this effect in other cases, though for a shorter period.—*London Med. Record*, January 15, 1877.

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On "Cellulo-vascular" Polypi of the Urinary Meatus.

The following is an abstract of some clinical remarks made by M. Gosselin (*Gaz. des Hôpitaux*, No. 112, 1876) on two cases of urethral polypoid growths in the female:—

In each case there was at the external urinary meatus a small red granular

prominence resembling an overgrown granulation, or one of the small vascular tumours that are sometimes developed on the neck or within the cavity of the uterus—tumours that have been called vascular polypi, but incorrectly, since they differ from ordinary polypi of the womb in being less voluminous, and in not containing uterine fibres and muscular tissue. To these growths of the meatus, M. Gosselin applies the name of "polypi" in conformity with general custom, but he takes care to point out they cannot be strictly regarded as such, since they are attached to the mucous membrane of the urethra by a broad base, and do not present a well-marked narrow pedicle. A similar exception in nomenclature is generally made with regard to the so-called naso-pharyngeal fibrous polypi, which have a too extensive attachment to allow of their being classed as true polypoid growths. Nélaton, indeed, proposed for them the denomination of fibromata of the base of the cranium. The tumours removed in M. Gosselin's two cases were found to be made up of embryonic cells without any admixture of fusiform fibres. The growths were more vascular, but in every other respect were constituted like ordinary mucous polypi. These tumours of the meatus do not involve the whole contour of the urethra, or spread to the vagina as cancerous growths do. But it very often happens that they rapidly recur after excision. This recurrence is probably due to the fact that the base of the tumour is large and extended for some distance along the urethra, and that a portion of this base may be left after operation. It is in respect only to this recurrence that these polypoid growths of the female urinary meatus are analogous to cancerous formations. The removed growth takes place only in the urethral mucous membrane; the glands do not become engorged, and there is never any cachexia. This tumour of the meatus is a vascular mucous polypus, and is essentially benign in its nature. In one of the cases referred to by M. Gosselin, the subject of which was fifty-five years of age, the tumour of the meatus was quite indolent. The patient suffered neither in walking nor during micturition, and there was no absolute indication for the removal of the small vascular growth. In the second case the tumour, though resembling that in the first-named case in size, nature, and composition, gave rise to acute suffering. The woman had intense pain when she walked, when the tumour was touched, and both during and for some time after micturition. Of this difference between the tumours in the two cases, M. Gosselin can give no explanation beyond the assumption that it was due to idiosyncrasy or individual variety. An analogous difference in character is presented in cases of erythema of the vulva. In some patients the eruption is absolutely indolent, in others it is associated with intolerable pruritus, and very intense pains about the vulva.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1877.

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Cure of Aneurism by Complete Temporary Pressure.

The interest which surgeons take in the treatment of the various forms of external aneurism seems to increase year by year. Indeed, the literature of the surgery and pathology of aneurism is now scarcely, if at all, less extensive than that of vesical calculus. Within the last eighteen months an important, and in many respects novel, mode of treating popliteal aneurism has been introduced into surgical practice—namely, the employment of complete temporary pressure by means of Esmarch's elastic bandage. We believe that the only recorded cases, three in number, in which this procedure has, up to the present time, been adopted, have been published in our columns.

The cases were under the care of Dr. Walter Reid, Mr. Wagstaffe, and Mr. F. A. Heath respectively, and were reported in the *Lancet* of Sept. 25th, 1875, Sept. 30th and Nov. 4th, 1876; and the account of the examination of the vessels of the first case is to be found in the *Lancet* of August 5th, 1876. The aneurisms had existed three months, between four and five months, and three weeks respectively. One is described as being as large as a hen's egg; another is compared in size to a small orange; the third is stated to have been "two inches long, filling the upper half of the space." The elastic bandage was applied firmly from the foot to the ham, then loosely over the ham, opposite the

site of the aneurism, and again firmly to the thigh above. It was left on for fifty minutes in two cases, for an hour in the other. Afterwards the circulation in the limb was partially controlled by a compressor on the femoral artery for a few hours as a precautionary measure. As soon as the aneurism was examined after the removal of the elastic bandage, the tumour was felt to be firm and free from pulsation in each case, and then rapidly diminished in size. Such a remarkably successful result in three consecutive cases demands for this mode of treatment the careful consideration of all surgeons. Its advantages appear so great that, if it prove to be safe, and adapted for the majority of cases, its adoption will soon become general. It is rapid in its action, easy of application, requires neither complicated apparatus nor a large staff of assistants, and may therefore be employed in private practice as easily as in hospitals. The period of its application being comparatively short, the administration of ether would be justifiable if the pain which is generally complained of after a short time prove unduly severe. Compression for an hour seems to be quite adequate to insure complete stasis in the aneurism, and it is well known that the lower limb may be kept bloodless for much longer periods than that without any bad results following.

What, then, is the *modus operandi* of complete temporary pressure? It is evident that in the cases above referred to the aneurisms were kept for an hour filled with stagnant blood, and it is almost equally certain that this blood coagulated in the sacs, and that the coagula extended along the adjoining artery as far as the nearest large collateral branch. In Dr. Reid's case it was found after death that the artery for two inches and a half above the aneurism was obliterated by fibrous tissue, and that the greater part of the aneurismal sac was filled with altered blood-clot, presenting an "amorphous, non-laminated, coffee-coloured substance, of the consistence of cheese, which showed no signs of organization, or of vascular connection with the surrounding parts," which consisted of laminated fibrin. This coagulum was doubtless caused by the contact of the stagnant blood with an abnormal tissue—the fibrin inside the sac,—and when once formed, the clot would extend upwards as far as the nearest large branch in the artery. The objects of the ordinary methods of treatment are to lessen the force of the circulation through the sac, and to encourage the formation of laminated fibrin within the sac. The elastic bandage is the only method (except injection of hæmostatics) that confessedly aims at the formation of passive blood-clots. The question is, Which is the better mode of cure, that by coagulation of the blood in the sac *en masse*, or that by the formation of laminated clots?

Since the days of Hunter surgeons have imagined that the true method of treating aneurism was in some way to fill up the cavity with laminated clot; and they have appealed to the existence of fibrinous layers in cases of spontaneous cure in support of their opinion. To follow as nearly as possible in the footsteps of nature in the cure of aneurism has been the aim and ambition of every surgeon who has bestowed any study and attention on this great subject. To such an extent has this been the case, that the coagulation of the blood within the aneurismal sac is generally designated "passive," because it has been held that blood-clots thus formed take no part in the cure of the disease, whereas laminated clots are termed "active," since they have generally been regarded as the real agents on which the ultimate cure must depend. It is now a question whether our notions of the pathology of the cure of aneurism will not have to undergo very considerable modifications.

There are reasons for believing that laminated fibrin may remain for years without becoming organized or connected with the walls of the sac. Wagner states that organization rarely occurs in laminated clots, and that softening is more common. It is, nevertheless, true that if an aneurism be once filled with such clot, it does more or less rapidly diminish in size, and may eventually disappear altogether. Recent investigations have tended to confirm the old belief that the so-called "passive" blood-clots are capable of readily undergoing organization. Lister alleges that he has seen organization occur in coagula on the surface of wounds. Within the bloodvessels the organization is said to be dependent upon the passage of leucocytes from the vasa vasorum

into the clot; the leucocytes are converted into fibrous-tissue vessels, which become connected with the vasa vasorum from within the clot, the broken-up corpuscles are removed by liquefaction and absorption, and the channel of the vessel becomes obliterated by fibrous tissue, which subsequently contracts. Applying these observations to the cases in question, we may infer that the clot formed in the artery above the sac will undergo organization and obstruct the vessel, subject to the rare accident of absorption of the coagulum before the completion of the organization process, while in the aneurism itself the fibrinous coagula lining the sac will retard or even prevent organization. Should any portion of the interior of the sac be exposed and bare, organization may occur there. But even if no portion of the clot within the sac does organize, the aneurism will be cured if the vessel leading into it be obliterated, because no more blood can get into it. In Dr. Reid's case the clot remained as a granular mass.

According to the evidence which we now possess, it is perhaps justifiable to state that while it is good to have an aneurism gradually filled up with laminated clot, it is probably equally good to have it filled with a rapidly-formed blood-clot extending into the afferent vessel and undergoing organization there.

The success that has so far attended the employment of the elastic bandage for the treatment of external aneurism has, to say the least, been sufficiently satisfactory to warrant a more extended trial.—*Lancet*, Jan. 20, 1877.

In the same journal for Feb. 3, Mr. THOMAS WRIGHT publishes the notes of an interesting case of aneurism of that portion of the femoral artery situated in Hunter's canal, treated at the General Hospital, Nottingham, by means of the elastic bandage. As this case differs in many respects from those commented on above we will discuss some of its details. The facts of Mr. Wright's case are briefly as follows: A man, aged thirty-nine, affected with syphilis, was admitted into the hospital on the 1st of November with an aneurism of the femoral artery of six months' duration. Nothing beyond rest in bed was attempted for a day or two, and then a Carte's compressor was applied for several days to the external iliac and common femoral arteries, but without much apparent benefit. From November 7th to December 4th a shot-bag was more or less constantly applied to the femoral artery, the diet in the mean time having been restricted according to the recommendation of Mr. Tufnell. No marked benefit having accrued from these modes of treatment, the elastic bandage was applied from the foot to the upper part of the thigh, and a stout India-rubber tourniquet fixed around the limb above the bandage, at 11.15 A. M. on December 31st. At 1.30 P. M. tourniquet was removed and a shot-bag was placed over the line of the vessel, but the bandage was allowed to remain in position. At 2.30 P. M., when the bandage was removed, the tumour was found to be firm, the pulsation to have ceased except at the upper part, and the circumferential measurement of the limb to have increased seven-eighths of an inch. As a precautionary measure the application of the shot-bag was continued. At 12.30 P. M. next day all pulsation of the tumour had ceased, but returned again in the evening, and continued feebly until January 4th. On January 5th pressure over the artery was discontinued, and the case was practically cured.

The progress of this case renders it extremely probable that the mode of cure was by the deposition of laminated fibrine within the sac, the return of the pulsation and its continuance for several days proving that the main vessel leading into the sac had not been completely plugged by the pressure of the bandage. But in the cases of popliteal aneurism it was distinctly stated that there was no return of pulsation, and the dissection of Dr. Reid's case showed that cure had taken place by plugging of the afferent vessel and the organization of the clot. There was, on the other hand, no evidence that after the pressure there was any deposition of fibrinous laminæ within the sac, or any vascular connection between the old previously-formed layers and the large amorphous non-laminated clot which had formed at the time of the application of pressure. We may, therefore, conclude that the cure of an aneurism may take place by both methods, the difference in situation probably accounting for the difference in behaviour.

In the exception which Mr. McGill makes to the statement that "the elastic

bandage is the only method (except injection of hæmostatics) which confessedly aims at the formation of passive blood-clots," he does not seem to distinguish clearly between the complete arrest of all the circulation in a limb by means of the elastic bandage, and the arrest of the circulation through a portion of the main vessel by application of temporary compression or of a temporary or permanent ligature.

However applied, the compression of the main artery only does not control the collateral and anastomotic circulation, and does not, therefore, prevent the flow of a certain quantity of slowly-moving blood through the sac; whereas the total compression by means of the elastic bandage allows, under favourable circumstances, not only of the coagulation of the blood left within the sac of the aneurism, but also of the formation of a firm clot within the artery leading into the sac, which afterwards becomes connected with the walls of the vessel by organization.

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On the Immediate Capillary Hemorrhages produced through Esmarch's Method.

Dr. NICAISE has suggested (*Gaz. Médicale de Paris*, No. 34, 1876) a plan of preventing the free bleeding so often observed after an operation performed on a part rendered bloodless by the application of Esmarch's elastic bandage and ligature. This method, as is well known, determines in the region to which it has been applied a vaso-motor paralysis which affects the whole thickness of a limb, and manifests itself immediately after the removal of the compressing ligature by two phenomena, viz., congestion of the integument, and, in case of an operation, capillary hemorrhage from all parts of the surface of the wound. This congestion is produced rapidly in the part of the limb below the seat of the ligature; the intensity and duration of the congestion bearing a relation to the force and duration of the previous compression. It is manifested on the surface of the wound by oozing of blood which is sometimes very free. This bleeding comes on immediately after the removal of the ligature, and persists for as long a time as the congestion of the skin; the flow of blood and the tegumentary redness gradually disappearing together, as both phenomena are due to the same cause. For the prevention of this troublesome bleeding after operation some French surgeons have applied a fine compressive dressing before the removal of the elastic ligature, and others merely a solution of perchloride of iron. Dr. Nicaise does not approve of either of these plans, but recommends the following instead: All visible arteries having been tied, and the elastic ligature then removed from the limb, a large sponge dipped in a solution of carbolic acid (1 to 50) is to be applied over the surface of the wound and firmly retained there until the redness and congestion of the skin has passed off. It will generally be necessary, Dr. Nicaise states, to hold this sponge on the raw surface for eight or ten minutes. Then, on the removal of the sponge, the wound will be found exsanguine and dry, save, as in a major amputation, at the site of some few smaller arteries overlooked before the removal of the elastic ligature.

Through supplementing Esmarch's method by compression with a sponge on the surface of the wound, the surgeon may perform even major operations with but little bleeding. Dr. Nicaise states that in a recent amputation of the thigh his patient lost scarcely 150 grammes of blood. An amputation performed under these conditions would then, as Dr. Nicaise points out, comprehend these three stages: 1. Application of the elastic bandage; application of the annular elastic ligature; removal of the bandage; 2. The operation; deligation of vessels; 3. Compression of the surface of the wound by the sponge, followed immediately by removal of the elastic ligature.—*Brit. and For. Med.-Chir. Review*, Jan. 1877.

Case of Cut Throat; Wound of Left Internal Jugular Vein treated by Ligature; Recovery; Remarks.

W. P——, aged thirty-five, was admitted into Mr. Gay's ward at the Great Northern Hospital on the evening of October 24th, under somewhat peculiar circumstances. As one of the surgeons was returning home after seeing his out-patients, his attention was attracted, at a distance of about a quarter of a mile from the hospital, to a crowd collected around a house in which a man was lying with his throat cut. On entering the house, he found the patient in a state of extreme collapse, suffering from an extensive and deep wound, from about an inch below the lobule of the left ear to the opposite side, along the upper border of the thyroid cartilage. Assistance was immediately procured from the hospital. There was abundant hemorrhage, which was at once arrested by the fingers being pressed into the wound, in the direction of the carotids. It was clear that one of the deep vessels of the neck had been wounded, but owing to bad light, and the instant welling up of the blood the moment the fingers were removed, the vessel could not be secured. The wound was therefore firmly plugged, and the patient conveyed with all speed to the hospital. Mr. Cripps saw him on his arrival. The left sterno-mastoid was found to be completely divided, and a wound inflicted on the left internal jugular vein, about three-fourths of an inch in length, from which violent hemorrhage ensued as the plug was removed. A finger placed above and another below the seat of the wound in the vessel, checked the bleeding. The vein was then separated from the carotids, completely divided with a scalpel, and tied at both ends with silk ligatures. As the patient began to rally from the extreme state of depression into which he had sunk, hemorrhage commenced from arteries which hitherto had escaped notice, including the lingual, facial, and superior thyroid. These were secured by ligatures, as well as some twelve smaller vessels which also began to bleed. The head was so arranged as to keep the parts, especially the divided ends of the sterno-mastoid in rest, and in apposition.

The patient made an uninterrupted recovery, and was discharged from hospital on December 1st.

Remarks by Mr. Gay.—In such a wound a considerable number of nerve-branches must have been divided. The descendens and communicans noni, for instance, could not possibly have escaped; and important branches of the cervical plexus, even those which contribute to form the phrenic, must have been in great peril if even they did escape. And yet, with the exception of some symptoms of pain about the shoulder, with weakness in raising the arm, which could only be very indirectly traced to nerve injury, no single defined lesion of motion or sensation remained after the cicatrization of the wound, and yet this took place by granulation.

The results of nerve injury from accidents and operations are interesting. The division of considerable nerve-branches—such as (1) those we are more familiar with—viz., the ulnar and the peroneal; (2) of smaller branches, filaments, or twigs, near their peripheral termination, as in ordinary operations or wounds, or in skin-shifting; and (3) of sympathetic branches, as by experiment—is followed by curious results. In the first, the parts to which the divided nerve is distributed may suffer permanent or only temporary loss of nerve power, or that power may be partially recovered; in the second, in the course of severe wounds such as that just related, no result attributable to nerve lesion can usually be detected; whilst in skin-shifting the effects of nerve lesion may or may not follow. In some instances, as in those about the neck, when not very extensive, they do not; neither do they usually about the face; but in the shifting of flaps, such as from the forehead for the formation of an artificial nose, they do follow. But in such cases the result is generally in the form of hyperæsthesia; the nose "feels cold"—resulting probably from increased sensibility to the atmosphere; but it resents wounds and other painful injuries as usual; and this often passes away to a considerable degree. In one case, that of a gentleman from America, whom Mr. Gay saw for an incurable ulcer at the base of the great toe, the toe from about the termination of the metatarsal bone was devoid of all sensation. The case is worth brief narration. After making every

attempt to cure the ulcer, which was about the size of a sixpence and deep, Mr. Gay cut it fairly out with its tissues, and, after liberating the edges by deep lateral incisions, brought the wound together by sutures. It healed, as did the lateral incisions; but it was replaced subsequently by another ulcer of exactly the same kind and size. The tissues were wholly insensible during the operation. The anæsthesia was occasioned, the patient said, by removal of the toe-nail twelve years before.

In experiments on a sympathetic branch, definite and well-known results follow; but the like results do not seem to follow division of its peripheral nerve-filaments, nor do analogous results constantly follow division of the nerve-filaments of the ulnar or peroneal in the event of their division at this part of their respective courses.

Now do not these facts show that, whilst in wounds of nerve-branches of a certain size, and at a certain distance from their peripheral termination, certain functional disorders inevitably follow, the like results do not follow division of their ultimate fibrils? In other words, do they not render it probable that there is, in the periphery of the nervous system, a certain zone in which the insularity in point of conduction, which is so marked in every other part, especially as the nerve-branches approach the nerve-centres, did not exist; and that thus the function of one nerve-fibril would instantly be undertaken by another in case of its being interrupted?

The absence of marked brain disorder after deligation of the internal jugular is another interesting fact suggested by this case, and contrasts with the difficulty which inevitably follows occlusion of the deep veins, such as axillary or femoral. After this occurrence œdema follows as a rule, and this is the least grave of the consequences which not infrequently take place. The occlusion of small branches, such as the dorsal on the foot, often results in permanent local œdema, from the comparative want of facility on the part of the contributing branches to find collateral accommodation for their blood. The construction of the sinuses appertaining to the venous circulation of the brain renders these currents far less liable to interruption than are those through the tributary veins of the limbs, although their main trunks have, in their construction and relations to immediately surrounding textures, a marked resemblance to the cerebral sinuses.—*Lancet*, Jan. 27, 1877.

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Preliminary Ligature of Veins in Extirpation of a Large Tumour of the Breast.

In the *Lyon Médical* for January 7, M. Mollière relates an interesting case of a very voluminous sarcomatous tumour of the breast, over the surface of which was spread a rich network of veins, terminating in two large trunks opposite the clavicle. Fearing either the entrance of air or the occurrence of severe hemorrhage, before removing the tumour he passed waxed threads under each of these trunks. The blue veins which furrowed the whole upper region of the breast disappeared, the integument assuming a white colour. The operation which followed was attended with the loss of very little blood, and no ill-consequence followed the ligature of these large trunks.—*Med. Times and Gazette*, January 20, 1877.

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On Trephining in the Different Forms of Osteo-myelitis.

M. Ollier, in a recent communication to the Academy of Sciences of Paris (*Gaz. Médicale de Paris*, No. 36, 1876), holds that trephining is applicable to all forms of osteo-myelitis which have, as a predominant character, intense and persistent pain. The operation is also applicable, under certain conditions, to acute osteo-myelitis with severe general symptoms. Intense and persistent pain is not, M. Ollier states, peculiar to a single variety of osteo-myelitis. The most diverse lesions of the bone-marrow may have a neuralgic character, the pain being the result of compression of the inflamed and swollen medullary tissue by the surrounding bone. In different cases of painful osteo-myelitis the

bone-marrow, when exposed by trephining, presents the most diverse appearances. In some instances there will be found a fungous mass bathed in serous fluid and inclosed in an osseous capsule. In other cases the medulla will be firm and gelatinous, and be traversed by trabeculæ of newly-formed bone; or, again, the surgeon may strike on a regular cavity with smooth walls, and filled by pus. When the osteo-myelitis is of slight extent, and the disease is circumscribed by an osseous wall, immediate and decided relief may usually be obtained by trephining. In the plastic form of osteo-myelitis, accompanied by more or less eburnation of the peripheral layer, relief is less speedy and less certain, except a considerable portion of bone be removed. When the foci of disease are disseminated, the causes of the compression of the bone-marrow will, probably in part, be left without the track of the trephine. In this diffuse form, however, the operation may arrest for a time the intolerable pain, and enable the patient to live in ease for several months, and even for years. Painful osteo-myelitis is generally met with near an end of the shaft of a long limb-bone (tibia, radius, femur).

The name of *epiphysial osteitis* cannot be properly applied to painful osteo-myelitis near one end of a long bone. An epiphysis is rarely the primary seat of the affection, and, when it is, the neighbouring articulation is also involved. The seat of election of painful osteo-myelitis is the spongy part of the diaphysis, near the cartilage of conjunction.

Notwithstanding its brilliant results, trephining, M. Ollier states, should not be performed until after the non-operative resources of treatment have been exhausted. In some cases the pain may be relieved by simple separation of periosteum, and without perforation of bone. Trephining should be reserved for those cases in which the inflammatory character of the lesion cannot be doubted. The operation may, when other plans of treatment have failed, be applied in any form of inflammation, if the severity of the symptoms demand intervention. In the acute form the grave and often fatal symptoms of suppurative osteo-myelitis may be prevented, and in the subacute or chronic forms, the predominant phenomenon of which is intense and obstinate pain, relief may be afforded by relaxing the pressure of the peripheral osseous tissue on the swollen marrow. The trephine, in its course to the medullary spaces, will traverse in some cases thickened and more or less eburnated bone, and in other cases bone that has become soft and atrophied. The condition of thickening is met with generally in old cases in which prolonged plastic transformations have taken place around the primary seat of disease; the condition of softening in cases of recent subacute inflammation. In the former class of cases spontaneous cure is almost quite impossible by reason of the resistance of the osseous walls. In the latter class pus will gradually find a way to the surface of the bone through gradual "medullization" of the wall of the shaft. This process of natural cure, however, may be carried over a long period, and may keep up for many months suffering that might at any time have been instantaneously relieved by surgical intervention.

In eight out of nineteen cases of painful osteo-myelitis treated by trephining, M. Ollier found pus. In ten cases were found the different morbid conditions of the marrow that have been mentioned. In three out of these ten cases there was a distinct and regular cavity. In the remaining seven cases the disease was not well circumscribed. In the last case, one of acute osteo-myelitis of the femur, M. Ollier gave exit to a large collection of fluid blood. The result of the operation, in most of these cases, was very simple. The type and character of the pain were at once changed, and the nocturnal attacks of deep-seated and lancinating anguish were replaced by a feeling of uneasiness in the wound, which gradually ceased. This change took place most rapidly in those cases in which a circumscribed cavity had been found in the bone.

Of the nineteen cases of trephining alluded to by M. Ollier two were fatal through pyæmia. In one of these cases osteo-myelitis persisted after the operation; in the other case the patient died on the sixty-third day from the date of operation after convalescence, as it was thought, had been well established, and the wound had almost completely closed.—*Brit. and For. Med.-Chir. Review*, Jan. 1877.

Subcutaneous Section of the Neck of the Thigh Bone.

At a late meeting of the Clinical Society of London, Mr. BRODHURST presented (*Lancet*, Feb. 3, 1877) a report of two cases of subcutaneous section of the neck of the thigh bone. In both the right thigh was flexed on the pelvis, and the knee crossed over the opposite thigh in such a manner as to close the vagina and to interfere with the evacuation of the bladder. The limb was shortened, in one seven inches, in the other four, necessitating artificial support in walking. The first case was that of a female aged eighteen. From eight years of age hip disease existed, which led to the formation of abscess, and ultimate bony anchylosis, with flexion and adduction of the thigh. The operation of division of the neck of the femur was performed on October 18th, 1864. The external incision was one inch and a quarter in length, from half an inch above the great trochanter. The bone was divided immediately above the trochanter, and then, the saw being reversed, a wedge-shaped piece of bone was excised. The hemorrhage was inconsiderable. The wound healed by first intention, and in six weeks the patient walked with help, and bore weight on the foot. Some flexion and abduction were present, and now, twelve years after the operation, there is useful motion. The second case was that of a girl sixteen years of age admitted to St. George's Hospital in January, 1872. There was firm bony anchylosis, the position of the limb being similar to that in the other case. The disease dated from seven years of age, an abscess forming at twelve, and the hip becoming stiff at fourteen. The operation was performed with a small saw, the neck of the bone cut through just above the trochanter, after Mr. Adams's method, the external wound being only just large enough to admit the saw. The bone was so hard that the section took twenty minutes. Suppuration followed; but in three months the patient could walk about the ward unsupported. The author stated that he had performed eight operations of this nature; some with a small, others with a large incision; but he found that when the opening was small, stretching and bruising of the soft parts, and consequent suppuration, took place, whilst, when the incision was free, rapid healing followed. The wound might be so placed as not to correspond with the point of section of the bone, and so the subcutaneous character of the operation be preserved even with the larger opening. Where deformity persisted a piece of bone should be removed. He thought the chisel inapplicable when bony anchylosis existed, or where the bone was very solid.

The PRESIDENT observed that the subject was one which had recently interested the society and the profession. The operation was also of use in cases of union in malposition after fracture. The question of the employment of the saw or the chisel was also of importance.

Mr. CROFT showed a case of successful subcutaneous section of the thigh bone for old anchylosis of the hip-joint. The patient, a clerk twenty-two years of age, was admitted on May 29th, 1876. He had suffered from gonorrhœa about fifteen months previously, which had rather suddenly disappeared after three months, and then pain in the hip commenced. Two months before this pain he had fallen down a flight of steps and bruised his hip. Soon after the onset of pain swelling commenced in the groin, with pain on movement of the limb, and an abscess of large size formed, which was opened in October, a large quantity of pus being evacuated, some discharge continuing till February, 1876. When admitted in May, 1876, there was extreme rotation outwards of the limb, the neck of the femur resting on the edge of the acetabulum, an angle of 140 degrees being formed by the thigh and the trunk. An attempt was made under chloroform by Mr. Croft and Mr. McCormac to produce some movement, but without success, showing that the anchylosis was osseous. The operation was performed on July 12th, the femur being divided *below* the trochanter, in the presence of Mr. William Adams and Mr. Gant. Division below the trochanter was selected on account of the scar over the front of the thigh, which appeared to adhere closely to the deeper parts, and would have rendered the movement of the saw difficult. Antiseptic precautions were adopted during the operation, and antiseptic dressings after. Much serous discharge lasted for some days, and at last the discharge became purulent, and

subsequently free suppuration occurred. Free drainage was therefore used, and firm bony union at the line of section at last occurred. The operation was, he believed, unique in the fact of subcutaneous division below the trochanter with the saw in the adult. The subsequent suppuration was also remarkable, and he believed that had the wound been firmly closed immediately after the operation, suppuration would not have occurred. In reply to the President, Mr. Croft detailed the antiseptic measures employed; they were mainly those advocated by Lister.

Mr. Barwell thought the time insufficient for the discussion of the numerous important questions raised by the papers. As regarded the employment of antiseptics, he thought them of great importance, and narrated two cases illustrative of their value, in neither of which did suppuration or pain exist. As to the choice of instruments, the saw must leave some dust, which was irritating to the wound, and liable to set up suppuration. Of Mr. Adams's twenty-two cases three died, and two or three escaped narrowly. Mr. Croft's patient had also a narrow escape. Seeing that the operation was one of convenience merely, the percentage of deaths was high, and too high, if constant, to allow of the operation being advised. But with the use of the chisel and the antiseptic method the risk was reduced to a minimum. With antiseptics the subcutaneous method need not be enforced; an inch of bone might be removed without risk. Various modes of operation had been practised. That first proposed by Rhea Barton, of Philadelphia, was higher than Mr. Croft's. Two years later Kearney Rogers, of New York, repeated the same operation. In 1862 and 1864 Sayre performed it with a broad saw, removing "blocks" of bone. A T-shaped incision was made on the outer side of the thigh, and the periosteal chisel used. In both cases suppuration occurred. Whatever might be the ultimate result of any form of operation, its value must depend on the presence or absence of suppuration; for when it once occurred the question of life or death was a matter of chance, and beyond the control of the surgeon. The chisel might be used even when the bone was very hard.

Mr. Gant thought that the views taken by the speakers were too mechanical, the most important point being the conditions favourable to the operation. Two conditions of disease were not suitable for Adams's operation; namely, where scrofulous disease of the joint existed, and the neck of the thigh-bone was gone, or would be too little vascular to unite; the other where the neck was much enlarged by deposit due to chronic rheumatic affection. These facts had led him in 1871 to propose division of the neck just below the trochanter. In one case, of a boy, he had made a small incision with a tenotomy knife, drawn aside the muscles, and divided the bone with a small saw in two minutes. The opening closed by return of the muscles, and primary union without any suppuration was effected. In another case he had also a good result in three months; no débris worth speaking of was left by the saw. He agreed with Mr. Barwell that the result must be tested by the presence or absence of suppuration. As to the operation, neither Barton's nor Sayre's could in any sense be called subcutaneous, nor could Mr. Brodhurst's first case be called so. The saw could not be set aside for the chisel. Professor Pancoast had recently performed his (Mr. Gant's) operation with a successful result.

Mr. Maunder thought that the title of Mr. Brodhurst's paper ought to be changed, his first case being in no sense subcutaneous, an incision one inch and a quarter long having been made. In the second case a piece of bone was excised; Mr. Brodhurst did not say whether that was subcutaneous, nor did he give details of the six other cases. He thought the rivalry between the chisel and saw a wholesome one. He had no preference for either, but his opinion was that the saw would be generally employed for the section of the neck of the thigh-bone, when it was proposed to attempt to establish a false joint by simple linear section of the bone. He thought that this would ultimately be the only case in which the saw would be used, because it might, under certain ill-defined conditions, lead to suppuration. He did not consider Mr. Croft's case a favourable one of the use of the saw, the patient having suppurated almost to death. In only one out of his own eight cases had he used the saw; this operation was done in June, 1876, and the patient was not well yet. In

nine cases with the chisel, suppuration had only occurred in two, the other seven healing by primary union, as after tenotomy.

Mr. Furneaux Jordan stated that he was one of the first to perform subcutaneous division of the neck of the femur by Adams's method. This was in a young woman with strumous disease of old date, where great flexion and adduction of the affected limb existed. A punctured wound was made, and the neck of the bone divided with a strong saw with broad teeth. Notwithstanding the fact that the wound was a punctured one, and that a compound fracture was produced, the operation not being strictly subcutaneous, and no antiseptic precautions were used, the case did fairly well. In such a case he would now prefer to make the section below the trochanter.

Mr. Bryant re-echoed the opinion that Mr. Brodhurst's cases could not be called subcutaneous, and in the second case Mr. Adams's operation seemed to have been carefully followed. To which class did the six other cases belong? He considered the subcutaneous operation very valuable; in four cases in which he had performed it with the saw, a good result had occurred in all. No antiseptics were used; a small valvular incision was made; the operation only took two or three minutes; no suppuration occurred, and recovery was rapid. In the fifth case there was no neck to divide. When the neck exists, Adams's operation was better than division below the trochanter; if the neck were not present, Gant's or Barton's. In this case the boy was weakly, both femora were anchylosed, and the thigh at right angles with the pelvis. He used the chisel. No suppuration occurred, but the boy died of pyæmia from bedsore five weeks after the operation. The choice of chisel or saw seemed to him to depend on the fancy or whim of the surgeon.

Mr. Brodhurst thought that none of the operations could be strictly subcutaneous, and that it did not matter if the incision were one or one and a quarter inches in length. He had operated with a small wound, merely a puncture, three times. One of the cases narrated was more strictly a resection, but was of interest from having been done twelve years, and good motion existing. He had operated on nine cases in all, in three with a small incision, the others about one inch. Owing to the greater freedom of movement, no suppuration from bruising of the parts occurred when the incision was free. He thought that the removal of a wedge of bone did not materially alter the character of the operation. He had never used the chisel, but believed when the bone was hard it could not be used.

Mr. Callender suggested that if the operation were called "valvular," as with the incision in the operation for loose cartilages in the knee-joint, the difficulty in the name would be got over, "subcutaneous" being certainly an incorrect definition.

On Removal of the Astragalus, with Remarks on Resection of Joints.

Dr. E. Kuster related at a late meeting of the Surgical Society of Berlin a case of fracture and dislocation of the astragalus from a fall in a lad aged 16. On his admission into the Augusta Hospital, there was a projection beneath the skin of the right ankle, caused evidently by a tarsal bone. As the projecting bone could not be reduced, and as the skin, though unbroken, was so much pressed on that sloughing was inevitable, Dr. Küster made an incision over the part and removed the bone, which was found to be the posterior portion of the astragalus; the back of which, with the articulating surface for the scaphoid bone, remained in place. The wound was dressed antiseptically, and healed without suppuration or any constitutional disturbance, except some rise of temperature on the day following the operation. The patient was dismissed cured at the end of two months with very good use of foot, which had improved still more when the case was related, so that, both in appearance and in function, scarcely any difference from the normal state could be recognized. Dr. Küster summed up his remarks on resection as follows: 1. Alterative injections should always precede more severe measures in cases of fungous and seropurulent synovitis, as they sometimes lead to recovery. 2. Antiseptic incision

of joints is a tolerably safe measure, and is indicated (*a*) in suppuration, whether in wounded or closed joints; (*b*) in fungus synovitis, which cannot be overcome in any other way; (*c*) in old irreducible dislocations, in order to be able to act directly on the luxated parts. 3. In all joints, even the knee, partial is to be preferred to complete resection, if the disease admit of it. 4. In total incision of the knee-joint the surgeon may endeavour, by preserving the healthy portions, to obtain a movable joint. 5. In dislocation of the tarsal bones it is best to perform primary resection. Dr. VON LANGENBECK, in speaking of incision in cases of irreducible dislocation, said that he had operated in this way in four cases where the head of the humerus was firmly fixed under the coracoid process; in none of them, however, could the head of the bone be moved from its place, and in one case it was resected. He approved of partial resection in cases of injury, but thought its application doubtful in cases of disease. Dr. KUSTER said that, as far as he remembered, the cases of dislocation referred to by Dr. von Langenbeck were all of old standing. Sometimes, however, cases were met with where the dislocation had existed a few weeks, and in these incision might be made with advantage. As regarded partial resection in cases of caries, the antiseptic treatment had made a great change in the conditions. Under its use he had seen recovery in a number of cases of vertebral caries with abscess, and he believed that, in partial resection of the tarsus for caries, it would prevent the progress of the disease.—*London Med. Record*, January 15, 1877.

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Acute Tuberculosis of Synovial Membranes.

M. LAVERAN (*Progrès Médical*) describes an interesting case of this affection, of which the following is an abstract. A hitherto healthy man was attacked by articular pains, localized principally in the knees, and accompanied, in the right joint, by effusion; at the same time there was moderate fever; subacute articular rheumatism was diagnosed. Eight days after the commencement of the pains, marked dyspnœa supervened; the fever became violent, and the patient died fifteen days after entering the hospital, presenting all the symptoms of asphyxia from acute tuberculosis. At the necropsy, tubercular granulations were found in great numbers in the lungs, pleuræ, peritoneum, liver, spleen, kidneys, etc.; and above all, it appeared that the joint-affections which had been the primary manifestations of disease were due to the presence of perfectly characteristic tubercular granulations in the thickness of the synovial membranes. Microscopical examinations left no doubt as to the identity of the synovial granulations with those found in other organs. In this case the tubercular granulations were better defined, and more easily recognizable than in chronic tubercular arthritis, because there were no fungosities, nor inflammatory matter surrounding the granulations and obscuring them. He says it is not astonishing that tubercle, which frequently affects the visceral serous membranes, should attack the serous coverings of the joints; he thinks that, if more joints were examined in subjects dying from acute tuberculosis, the affection would be more generally discovered; he considers it an explanation in many cases of vague pains in the limbs and joints complained of by many patients. As such cases are liable to be confounded with acute rheumatism it is necessary to distrust for the future those articular rheumatisms which are accompanied by pleurisy, meningitis, peritonitis, etc., and in which, death having occurred, no *post-mortem* examination has been made. The existence of rather large tubercles in the interior of the pons Varolii and medulla, gave rise to the suspicion that these lesions were older than the others; but microscopic examination demonstrated that they were constituted of small granulations compressed one against the other. There was no trace of old tubercular lesions at the apices of the lungs; but the remains of a pleurisy which had occurred in childhood, had left solid adhesions of the pleural surfaces, with thickening of the membranes. The tubercles in the pons and medulla gave rise to no symptoms during life, probably because they separated without destroying the white fibres; no tubercles were discovered in the floor of the

fourth ventricle, or near the nuclei of origin of the bulbar nerves. The dyspnœa which occurred is sufficiently accounted for by the tuberculosis of the lungs without the introduction of a hypothetical compression of the pneumogastric nuclei by the new formation.—*London Med. Record*, Jan. 15, 1877.

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Forcible Extension of Nerves in Traumatic Tetanus.

Dr. PAUL VOGT, of Greifswald, records (*Centralblatt für die Chirurgie*, No. 40, 1876) an interesting case in which this proceeding was successfully performed. The patient was sixty-three years of age, and had injured his right hand by the falling of a stone. The ragged edges of the wound in the palm quickly united under the use of disinfectant dressing, but the dorsal surface healed very slowly. Fourteen days after the receipt of the injury symptoms of tetanus made their appearance. Large doses of opium and morphia, with local bathing, were administered, but violent attacks of opisthotonos and rigidity of the back and lower extremities supervened, followed by intercurrent clonic cramps. The wound three weeks after the accident presented a swollen cicatrix in the palm, and a granulating wound on the dorsum of the third metacarpal bone. Neither the cicatrix nor the wound was abnormally sensitive, nor was any pain produced by pressure on the nerves of the forearm or arm. The region of the brachial plexus was however very tender, and when pressure was made here, tonic contractions of the muscles of the neck followed. As the treatment adopted had proved ineffective, Vogt recommended division of the cicatrix and detachment of the edges of the wound, with neurectomy of the median and radial nerves, because the wound lay in the region of both nerves, and extension of the brachial plexus. This was carried out under the influence of an anæsthetic and with the employment of the carbolic-acid spray. After division of the cicatrix at the seat of injury, a longitudinal cut was made at the anterior border of the trapezius, about two inches above the clavicle, the brachial plexus was exposed, raised with the index-finger, and the loops were drawn out and vigorously pulled in a centripetal and in a centrifugal direction. A drainage tube was inserted, and the wound was dressed with salicylicated jute. It should be mentioned that the nerve-sheaths, being red, were freely divided. On awakening from the narcosis the patient was found to be practically cured. The mouth could readily be opened, the tongue thrust out, and food swallowed. There were no remarkable alterations either of mobility or of sensibility in the arm. A violent but short attack of vomiting occurred twenty-four hours after the operation. Recovery was complete in a fortnight or a little longer.—*Practitioner*, Jan. 1877.

Midwifery and Gynæcology.

On an Uncommon Form which the Uterus may take during Pregnancy.

In the *Archives de Tocologie*, Dec. 1876, M. DEPAUL points out the differences between a partial retroversion of the gravid uterus and an outgrowth, as it were, of the organ under the promontory of the sacrum. It is a result of arrest of growth in one part of the uterus causing increased action in another part. This part is generally in the posterior wall of the uterus, and has been called sacciform development of the uterus. Depaul says it is incorrect to describe this condition as partial retroversion of the uterus, as has been done by many authors. One of the consequences of this sacciform development is the displacement of the os uteri which it causes. Sometimes in these cases it is impossible to reach it, and it then becomes a serious complication in labour. At the same time, there are other pathological conditions of the uterus which are capable of displacing it in a similar manner.—*London Med. Record*, Jan. 15, 1877.

Cephalic Version.

Dr. M. B. WRIGHT, of Cincinnati, in criticizing (*Am. Practitioner*, Feb. 1877) Dr. Parvin's case (see MONTHLY ABSTRACT for February last, page 90), says: "It has reminded me of several points not clearly understood alike by members of the profession; and I hope you will allow me to state them briefly for your individual consideration, when your mind is comparatively free from more important duties.

"Writers and speakers are apt to allude to podalic version as of easy accomplishment. So it is ofttimes. But there are cases which subject to severe test the best skill of the experienced practitioner. The same remarks will be allowed as applicable to cephalic version; and upon this point I shall offer a few words of explanation presently.

"Practically, it may be a question of no importance whether the presence of the shoulder at the superior strait is to be attributed to over-distension of the uterus by liquor amnii, and too extensive a range of the fœtus; to obliquity of the uterus, or deformity of the pelvis. An opinion upon either of these conditions, as a cause of malpresentation, would be at best mere conjecture. How common is an excess of liquor amnii, and are departures from normal structures of the pelvis; and how seldom do we encounter in these cases malpresentations! Again, some women are annoyed by the constant motion of the fœtus, while others feel only slight tappings at long intervals. Still the former are no more subject to difficult labour of any kind than the latter. In using the term *practically*, I mean that a shoulder presentation at term cannot be successfully delivered as a shoulder presentation. If a narrow or deformed pelvis should add to the complication, the question how shall delivery be effected, must stand out by itself. My attention has been more directed to the inquiry, when produced, rather than how produced. Cases of long standing, congenital, as it were, I have imagined to be more difficult of management than those more recent, accidental. In the former, after the shoulder has been moved out of the way, there has been a strong tendency to return, requiring pressure to be continued until the vertex under uterine action has fairly taken its position at the superior strait. In the latter, the change of presentation is not only more easily effected, but does not require repetition.

"Guided by experience, I should say that no decided effort should be made at cephalic version until after the complete dilatation of the os uteri. Command of the entire shoulder is needed, and this cannot be secured while the partially dilated os interferes with the free use of the hand.

"Again, sufficient force, direct and continuous, cannot be applied to the shoulder while the membranes are unruptured and tense. If their integrity can be preserved until the second stage of labour has become somewhat advanced, so much the better; but their rupture must precede the force that is to be applied to get the shoulder out of the way.

"A single unsuccessful case has too often led to unchangeable prejudice against the means used for the correction of evil. This has been especially so with some of my friends who have availed themselves of the knee and breast position as an aid to podalic version. Their want of success, I am sure, was to be attributed to something extraneous to position.

"Your case suggests the propriety of placing patients with shoulder presentation in the genu-pectoral position at an early period in labour, not so much in anticipation of 'spontaneous evolution,' as to secure gravitation of the breech in aid of outside pressure.

Autotransfusion in Post-Partum Hemorrhage.

Dr. GOLDSCHMIDT, of Berlin, has lately published (*Deutsch. Med. Wochenschrift*, Dec. 2, 1876) the following remarkable and instructive case. He says: On October 30, I was called to a woman who had been delivered two hours previously and who exhibited alarming symptoms.

The history of the case was as follows: I had attended her in three previous

pregnancies. On the first occasion I had to remove the after-birth after it had been retained an hour; and on the second and third occasions I was called in to remove the placenta which had been retained several weeks after abortion. Last June she had considerable hemorrhage, but she bore it without detriment to the child. The child was a full-term strong female. The midwife said that the labour was very quick. After the delivery of the child the uterus tilted over forwards, and at the same time there was very severe hemorrhage. The midwife succeeded in removing the after-birth and replacing the uterus, but she sent for me at once.

On my arrival, I found the woman insensible and pulseless. The uterus was lying over the pubes, well contracted, and about as large as the fist. Both lower extremities were at once enveloped in bandages, strong stimulants were administered, and the husband was sent to a chemist's for tinctura ferri, acetic ether, and ergot. We succeeded in restoring the woman to her senses, and I was then able to make a more precise examination. The contraction of the uterus above the pubes remained as before. *Per vaginam* one came upon a series of folds, so that the mouth of the womb was not at once discoverable. It lay somewhat behind, but when it was reached the hand could be introduced into the flabby uterus with ease. Behind the entrance lay a half-round, tolerably hard mass, which might be taken either for a new growth in the posterior wall, or a retroflexed uterus.

The patient, who in the mean time had come to herself, began to complain of so much pain in her feet that I was compelled to remove the bandages, which I was the more induced to do because her pulse had become strong again. Unfortunately, collapse and death followed immediately. After death we satisfied ourselves as to the contraction of the uterus above the pubes.

The necropsy revealed a very lengthened, very thin, and lax uterus, the lowest portions of which were as thin as cardboard, and contained some small placental remains.

Dr. Goldschmidt goes on to remark: "There is no doubt that atony was the cause of the hemorrhage in this case. The continued contraction of such a limited portion of the anterior part of the uterus is of great interest. It is evident that atony may exist, although the uterus feels firmly contracted externally.

"In the second place, the autotransfusion is interesting. It is quite certain that the woman would have been saved had we not listened to her complaints and removed the bandages."

(Now is it a fact that we can save the life of a woman in extreme cases of flooding by bandaging the lower extremities? In our standard the mention of such a simple procedure is entirely omitted. Barnes (*Obstetric Observations*, p. 559) says that in cases pending transfusion we should raise the body, so that "the head depending may receive by gravitation what blood there is left in the vessels." Ramsbotham, Schrœder, Hervieux, and Leishman say nothing about it. In Cazeaux and Farnier's Midwifery, 5th American edition, 1870, compression of the aorta is suggested, but there is no mention of bandaging the lower limbs.

It is quite certain that we can, by means of an elastic bandage, almost entirely empty the bloodvessels of the lower limbs. We have only to watch an amputation after the application of an Esmarch's bandage to be convinced of this. In short, the blood circulating in the lower limbs may be "transfused" to the trunk, head, and upper extremities, without the slightest difficulty. But the lower limbs could not be *entirely* deprived of their blood-supply for more than a very limited period, without endangering the safety of those parts. It would be better, therefore, under all circumstances, to use such pressure only as would reduce the circulation to a minimum. This could be easily accomplished by watching the artery behind the inner malleolus with the finger. The upper extremities might be treated in a similar manner, leaving the radial artery free for examination.

There is no doubt that in this way we may gain a few ounces of blood to supply the vital organs of our patient at that critical moment when hemorrhage has ceased, but the patient is in imminent peril from syncope.)—*London Med. Record*, January 15, 1877.

An Unusual Recto-Vaginal Fistula.

Dr. E. CHENERY reports (*Boston Med. and Surg. Journ.*, Nov. 23, 1876) the following rather unusual case of rectal fistula :—

Miss S., twenty-eight, employed in a shop, had for some time been declining in health. She finally left work and came home to rest and try means for her restoration. Her symptoms were those of general debility, anæmia, and costiveness, to meet which she was advised to take an electuary of subcarbonate of iron and powdered Peruvian bark. It was hoped that the bark in this preparation would serve to overcome the habitual costiveness, as also the constipating effects of the iron. Contrary to expectation, the mixture proved violently cathartic, attended with considerable irritation of the rectum and sharp pain and weight in the perineum. Each dose being followed with like effects, but few doses were taken. The pain and irritation at the lower part of the bowel which had now begun did not fully cease. A small swelling soon made its appearance to the front and right of the anus, about an inch and a quarter from the anus and three-quarters of an inch to the right of the perineal raphé. Following the bunch, a purulent and offensive discharge came on from the vagina, with occasional bubbles of air. In this condition she subsequently consulted me.

On making pressure on this tumour, which was somewhat larger than half a filbert, it was found that the matter escaped into the vagina and appeared at the vulva; and a speculum revealed the fact that the outlet was on the posterior wall of the vagina, about two inches within.

The case was regarded as a rectal fistula in which the sinus had come to the inner surface of the skin and, instead of perforating it, had burrowed upwards outside of the sphincter vaginæ, and made its exit through the vaginal wall of the recto-vaginal septum, travelling a long way to go a short distance.

It appeared to me that if I could introduce a fine flexible probe into the vaginal orifice of the fistulary sinus, and carefully work it down the serpentine tract to the interior of the swelling, I might then cause the end of it to impinge against the under surface of the skin, and be able to open down upon it and bring it through without disturbing the parts. After a little patience, by the aid of a fenestrated speculum, I succeeded in doing this.

Being now practically rid of the vaginal portion of the canal, I had reduced the other half to a simple common fistula. The next step was to introduce another probe at the point where the first came out, find the sinus, and follow it round the sphincter ani to the bowel. This was easily done; and the part was divided in the usual way. The probe being taken from the vaginal part and the canal well irritated, the lower opening was plugged with a pellet of cotton, and the cut packed and dressed. The patient made a speedy and perfect recovery, suffering no damage from the operation.

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On the Proper Treatment of Laceration of the Cervix Uteri.

At a recent meeting of the New York County Medical Society (*New York Med. Journ.*, Jan. 1877) Dr. THOMAS ADDIS EMMET read a paper of which the following is an abstract.

About two years ago I read a paper before this Society on the subject of "Laceration of the Cervix Uteri as a Frequent and Unrecognized Cause of Disease," and since that time I have heard expressions of disappointment from some of those who have performed the operation which I then suggested. The cause of failure rests, I think, in the neglect to properly prepare the patient by appropriate treatment, for, if this precaution be not taken, not only may no benefit result, but the life of the patient may be jeopardized.

The conditions detrimental to an operation, and which should be removed before bringing the flaps together, are cystic disease of follicles, which roll out the flaps and sometimes nearly strangulate them; pelvic peritonitis or cellulitis; displacement of the uterus; presence of cicatricial tissue at the apex

of the cleft; also constriction of the cervix by cicatrix at the base, resulting from double laceration; and congestion of the uterus from any cause.

Cystic disease of the follicles of the cervix results from an inflammation of them, and consequent dilatation from closure of their orifices. When the patient is examined in this condition, the mucous membrane will be found rolled out usually to the internal os, and the flaps will look as if strangulated. If the cervix is examined by the finger, numerous little cysts, resembling shot, will be felt. The treatment is to puncture them, and apply Churchill's tincture of iodine to the cervix. This procedure must be had recourse to time and again, as long as their presence can be detected.

Pelvic peritonitis or cellulitis is a very common result of the injury, and it will recur in nearly every instance after operation, if it be performed before every trace of tenderness has disappeared from the neighbourhood of the uterus. It frequently happens that one or both folds of the broad ligament become thickened or shortened by inflammation. Then the whole weight of the uterus is supported by the ligament when the patient sits or stands up. Irritation, which follows, often keeps up an old cellulitis, and this cellulitis can most readily be cured by adopting a pessary to relieve the tension; care must be taken, however, not to apply a pessary which will lift the uterus too far upward, for in that case tension would still occur, but in the opposite direction. The best guide is the patient's sense of relief, and her unconsciousness of the presence of the instrument.

The other treatment of peritonitis or cellulitis is the use of counter-irritation to the lower part of the abdomen, and vaginal injections, night and morning, of water of a temperature ranging from 100° to 110°. The most frequent form of displacement is backward and to the side. Treatment must be continued till the uterus has assumed the normal or anteverted position.

Cicatricial tissue is usually found at the apex, or deepest part of the cleft, and, moreover, in cases of double laceration, it may be so extensive as to cause constriction of the cervix, when aided by distended mucous follicles.

Congestion of the uterus, if present, acts unfavourably to the operation. It is a usual result of sagging down of the organ from the loss of the perineum or other supports. Hot-water injections, with artificial support, aided by the use of quinine, if the patient suffers from malaria, should be persevered in till the patient is relieved.

After the proper preparatory treatment has been pursued, failure, partial or complete, may result from lack of sufficient care to adjust the flaps. When the cysts, if formerly present, are thoroughly evacuated, a convex surface may result from contraction—this must be cut away to get proper adaptation.

Again, the cicatricial tissue must be thoroughly removed, for its presence in the cervix is often an unsuspected cause of nervous or neuralgic symptoms in other parts of the body. Failure may also result from too tight twisting of the sutures, causing them to be cut out.

The operation of freshening the edges is simple in principle and not difficult in practice. It is much facilitated by drawing the uterus gently down toward the vulva, and steadying it with a strong tenaculum, held in the hand of an assistant. The lowest portion of the lacerated surface should be removed first, inasmuch as by this means the oozing of blood does not obstruct the view of the undenuded surface. The portion to be removed is hooked up with a tenaculum, and kept on the stretch, while it is being separated, for, by doing so, a continuous strip, running from flap to flap, can be taken away, and it is the best plan for insuring denudation of the whole surface. If the surface be lacerated by a dull instrument, instead of a sharp knife or scissors, there may be additional risk in obtaining union by first intention. The more dense and indurated the tissue, the less vascular will be the parts, and in such a case the lancet-pointed needle of Dr. Sims serves best for the introduction of the sutures. If, however, the cervix is soft and vascular, the round needle should be used. The chief object to be kept in mind is the accurate adjustment along the outer or vaginal surface of the cervix, for, if this is done, no trouble will occur in approximating the inner surface. After a week, the

sutures can be removed, but care must be taken in their withdrawal that the adhered surfaces be not torn apart.

The principles of the operation are simple, and its execution not difficult, but the best results will follow cases in which the greatest care has been taken as to the details of treatment, and particularly to the preparation of the patient, which may extend for a period of two or three months, or till all signs of coexisting disease are removed.

Dr. FORDYCE BARKER said: "When I heard Dr. Emmet read his first paper, some two years ago, I listened to it with interest and amazement. If I had at that time expressed my opinions on the subject, I would now be put to the painful duty of recalling them, for I did not then believe that the views in regard to pathology and treatment which were then advanced, would be borne out by the body of the profession. I am now thoroughly converted, and consider that the observations which were then made are of great importance, and founded upon true pathology. Some time after Dr. Emmet read his paper I had the privilege of seeing a case of the class referred to, and found it was as Dr. Emmet had described, the uterus measuring five inches. The operation was performed, and, on examining it some time afterward, I was at first of the opinion that Dr. Emmet had by mistake presented another patient, so complete was the change in the uterus and cervix. An important feature of the case was that no cicatrix could be discovered as a result of the operation, and in this respect an operation presented a marked improvement on the process of nature. Some years ago, when I conducted clinics at the college to which I was attached, and later at Bellevue Hospital, I found that a considerable number presented erosions of the cervix, which, though improved by treatment, would continually relapse. I then used the actual cautery, and was much pleased with its effects. I feel now convinced that the erosions which developed after, as a result of parturition, were what Dr. Emmet has taught us as lacerations of the cervix. Cases which were treated at the clinic, occasionally returned for delivery in the obstetric wards, and I then found, contrary to what might be expected, that the cicatrix presented no obstacle to the dilatation of the os uteri. In the upper class of patients I have seen few of the cases referred to in later years, and it results, I think, from the better attention which they receive from their medical attendant. I was called to see a case some time ago, in which a surgeon had performed Dr. Emmet's operation, and found the patient suffering from general peritonitis, which began as pelvic peritonitis. The patient had not had the benefit of preparatory treatment, which was so strongly urged in the paper which we have just heard."

Dr. PEASLEE said: "The lacerations referred to by Dr. Emmet are usually on the left side, but the diagnosis of them is not such an easy matter. When at Demilt Dispensary, a large number of cases of the class referred to by Dr. Emmet presented themselves, but were not recognized, for none of us knew anything about them till Dr. Emmet told us. It was he who, in a happy moment, brought the anterior and posterior surfaces together with two tenacula, and instantly demonstrated that what we all thought was an ulceration of the cervix was nothing more or less than a laceration. When lacerations take place as far up as the vagina, involution is stopped from the continuous irritation which keeps up a congestion. If the patient remain in bed, the same result will not happen to such an extent. This subinvolution is a common cause of sterility, and it is proved by the fact that the patient becomes pregnant after the operation.

"One case of laceration which I observed was seven inches in circumference, or about two and one-third in diameter. Three months after the operation it had diminished to the normal size. In regard to the removal of the sutures, I have had no trouble with the flaps separating, as I keep them in for more than a week, and do not take them all away at once. The uterus heals more often by first intention than the majority of other tissues, for the reason that it is composed of non-striated muscular fibre."

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THE MONTHLY ABSTRACT

OF

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Anatomy and Physiology.

The Localization of Functions in the Cortex Cerebri.

M. PROUST has communicated to the Académie de Médecine (*Gaz. des Hôp.* December 2) a case of extreme interest bearing on the doctrine of localization of functions in the cortex cerebri. A young man, aged nineteen, on October 8 was drunk. In struggling with somebody he received a severe wound on the left side of his head from a bayonet. Blood escaped freely, and in a few moments later the man lost consciousness for about a quarter of an hour. The day following there was a second loss of consciousness equally short. Throughout the day the man felt giddy and dull, but he had no trouble in movement or in speech. He had been taken to Mazas. On the 17th, when he left prison, he was in a satisfactory condition. It was only on October 19 or 20—that is to say, eleven days after the accident—that the phenomena appeared, for which he was admitted under Dr. Proust, at Saint Antoine. First he had difficulty in finding his words, then the embarrassment of speech gradually increased, and he lost power in his right hand. According to his account he had had very little pain, no vomiting, no convulsion, and no "contracture" when he was admitted to Saint Antoine. On October 24, he had right facial paralysis limited to the muscles supplied by the lower branches. His tongue pointed towards the paralyzed side—that is, towards the right; the uvula pointed to the left. The sensibility of the pharynx and palate was intact. He had incomplete motor paralysis of the right arm, but sensation was unaltered. At times there was itching in the fingers of the right hand. The movements of the hand were very awkward. The paralyzed muscles responded well to faradism. The patient showed a certain amount of hebetude, a little drowsiness, and considerable indifference to what passed around him. Nevertheless, his intelligence did not appear sufficiently altered to explain the trouble which he had in stating his ideas—the difficulty with which he found his words, which he often substituted for one another. He had, in fact, a certain degree of aphasia. The lower right limb and all the left side were free. There were no ophthalmic or auditory changes. His pulse was 52, and his temperature 98.6°. On the left parietal region there was an oblique wound extending downwards and forwards about an inch and a quarter long; it was situated at the level of the parietal eminence, at a vertical height of about three inches and three-quarters above the external auditory meatus. The localization of the paralysis on the side opposite to the wound of the scalp evidently established the existence of some compression or irritation of the surface of the brain corresponding with the parietal; and as the phenomena were not manifested until more than ten days after the accident, M. Proust thought that the compression or irritation was the result of a secondary inflammatory action set up by the depression of the skull in that region. M. Proust now called in the aid of his surgical colleague M. Terrillon, and trephining was decided upon. The operation was performed on October 27. Scarcely was it completed—the patient was not yet dressed—when, desiring once more precisely to define the previously observed morbid phenomena, the medical men were struck with an almost instantaneous improvement. The facial paralysis was not very sensibly diminished,

but the paresis of the arm was much less intense. It was the same with the aphasia. The patient could "find his words" easily, he could even count from 80 to 97 very distinctly, which he could not do before. His hebetube almost completely disappeared. The improvement continued, and, with the exception of an attack of erysipelas, which disappeared on November 9, the results of the operation were entirely satisfactory. The patient now is completely recovered. MM. Proust and Terrillon instituted a series of experiments, having for their object to determine the point of the cerebral convolutions which had been irritated. They arrived at the conclusion that the seat of the lesion ought to be the ascending parietal convolution at the level of the second frontal, and that the ascending frontal and the second and third frontal convolutions ought to be secondarily affected. This case harmonizes with the results of Ferrier's experiments, and also with autopsies in a certain number of cases of superficial softening recorded by Charcot and others. On the 5th inst. a letter was read at the French Academy of Medicine from Dr. Raynaud, of the Lariboisière, bearing on M. Proust's case as above recorded. Dr. Raynaud had a patient suffering from phthisis, who, three days before death, was taken suddenly with a paralysis limited to the left upper limb, affecting almost exclusively the extensor muscles of the hand on the forearm. At the autopsy, Dr. Raynaud could only find a single lesion, viz., a very small focus of red softening developed in the right hemisphere around a meningeal tubercle. This patch, which did not exceed the dimensions of a twenty-centimes-piece, was situated on the ascending parietal convolution in the gray substance forming the floor of the fissure of Rolando, less than two inches from the upper internal edge of the hemisphere. This point, according to Ferrier's experiments on monkeys, is in relation with the movements of the forearm. Dr. Raynaud's observation was, to the best of his belief, the only one in which brachial monoplegia had existed to the exclusion of every other cerebral phenomenon, and which permitted a relationship to be established between the anatomical lesion and the functional trouble.—*Med. Times and Gaz.*, Dec. 16, 1876.

On Photo-Chemical Processes in the Retina.

On January 5th, Dr. W. Kühne, Professor of Physiology in the University of Heidelberg, read before the Naturhistorisch-Medicinisches Verein, of Heidelberg, a paper entitled "Zur Photo-chemie der Netzhaut." The following abstract of it is published by Dr. Arthur Gamgee in *Nature* for February 1st.

A short time since, Boll (a pupil of Max Schultze and Du Bois-Reymond, who now occupies the Chair of Physiology in Rome) communicated to the Berlin Academy the remarkable fact that the external layer of the retina, *i. e.*, the layer of rods and cones, possesses in all living animals a purple colour. During life, according to Boll, the peculiar colour of the retina is perpetually being destroyed by the light which penetrates the eye; darkness, however, restores the colour, which vanishes forever almost immediately after death.

The wonderfully suggestive nature of Boll's discovery led Kühne to repeat his observations; in doing so, whilst he has confirmed the fundamental statement of Boll, he has ascertained a number of new facts of great interest.

Kühne's observations were made on the retina of frogs and rabbits. In the first place, implicitly relying upon the statements of Boll, he examined, as soon as possible after death, the retina of animals which had been kept for some time in darkness. He soon found that the beautiful purple colour persists after death if the retina be not exposed to light; that the bleaching takes place so slowly in gas light, that by its aid the retina can be prepared and the changes in its tint deliberately watched; that, when illuminated with monochromatic sodium light, the purple colour does not disappear in from twenty-four to twenty-eight hours, even though decomposition have set in.

These first observations of Kühne on the vision-purple (*Sehpurpur*), as he terms it, whilst they showed that the disappearance of the colour is not, as Boll had asserted, a necessary concomitant of death, removed many of the difficulties which stood in the way of a careful investigation. Carrying out his preparation in a dark chamber illuminated by a sodium flame, Kühne was able

to discover the condition necessary to destruction of the vision-purple as well as some facts relating to its restoration or renewal.

As long as the purple retina is kept in the dark or is illuminated only by yellow rays, it may be dried upon a glass plate without the tint changing; the colour is not destroyed by strong solution of ammonia, by saturated solution of common salt, or by maceration in glycerine for twenty-four hours. On the other hand, a temperature of 100° C. (212 Fahr.) destroys the colour, and alcohol, glacial acetic acid, and strong solution of sodium-hydrate produce the same effect.

Kühne's next observations were directed to the discovery of the influence of light of different colour upon the vision-purple. It would appear that the more refrangible rays of the spectrum have the greatest action, and that the red rays are as inactive as the yellow.

Kühne now found the incorrectness of Boll's assertion that the retina of the living eye exposed to ordinary daylight does not exhibit the vision-purple, for on preparing the eyes of animals which had just been exposed to light, as rapidly as possible in the chamber illuminated by sodium light, he discovered that the retina was of a beautiful purple. It was only when eyes were exposed for a considerable time to the direct action of the sun's rays that a fading of the purple colour was perceived.

A most suggestive experiment now threw some light upon the circumstances which retard the decolorization, and which restore the vision-purple. The two recently extirpated eyes of a frog were taken; from one the retina was removed, whilst an equatorial section was made through the other eye, so as to expose the retina and still leave it *in situ*. Both preparations were exposed to diffuse daylight, until the isolated retina had lost its purple colour. On now taking the other preparation into the yellow chamber and removing the retina, it was found that its colour yet remained; it was *dark red*, but was bleached when exposed in its naked condition to daylight.

This experiment was confirmed by others, in which the effect of strong sunlight was substituted for that of diffuse daylight.

But the most curious results of Prof. Kühne's experiments have reference to the restoration of the vision-purple. If an equatorial section be made through a recently extirpated eye, and a flap of retina be lifted up from the underlying choroid and exposed to light, the purple colour of the flap will be destroyed, whilst the colour of the rest of the retina persists. If, however, the bleached portion of the flap be carefully replaced, so that it is again in contact with the inner surface of the choroid, complete restoration of the vision-purple occurs. This restoration is a function of the *living* choroid, probably of the living retinal epithelium (*i. e.*, of the hexagonal pigment-cells, which used formerly to be described as a *part* of the choroid), and it appears to be independent of the black pigment which the retinal epithelium normally contains. As it is absolutely dependent upon the life of the structures which overlie the layer of rods and cones, it is natural that it should be observed to occur for a longer time after somatic death in the frog than in the rabbit.

Kühne's researches, though suggested by the interesting observation of Boll, have not only corrected many errors which that observer had committed, but have led to the discovery of facts which add immensely to the importance of the newly-observed vision-purple.

They have shown that the living retina contains a substance which under the influence of light undergoes chemical changes, which vary in intensity according to the intensity and character of the luminous rays, and they point to the existence of structures in connection with the retina which as long as they are alive are able to provide fresh stores of substance sensitive to light.[1]

[1] I have repeated all the more important observations of Kühne with the eyes of several *Ranæ temporariæ*, and with those of two rabbits, of which one was an albino, and can entirely confirm all his interesting facts. In ordinary daylight, the purple-red colour of the frog's retina, and its subsequent decolorization, may be most satisfactorily demonstrated. The use of the dark chamber illuminated by sodium is, however, useful in cases where the dissection of the eye has to be conducted with care.—A. G.

Since the above account of Kühne's researches was written, he has published in the *Centralblatt für die Medicinischen Wissenschaften* (January, 1877, No. 3) a short paper, dated January 15, in which he announces the startling confirmation to his previous researches afforded by his *having been able to obtain actual images on the retina which corresponded with objects which had been looked at during life* (!).

The discoveries of Boll and Kühne must, as the latter remarks, have led to the thought that after all there might be some truth in the stories which we all have heard of images of things seen in death being left imprinted on the eye. After his first researches Kühne endeavoured over and over again to observe on the retina of rabbits bleached spots corresponding to the images of external objects, but his endeavours failed. As Kühne remarks, and as all readers who have understood his experiments will allow, in order to obtain a permanent photograph, or, as he terms it, *optogramme*, the effect of the light would have to be so prolonged or so intense as to destroy the balance between the destruction of the vision-purple and the power of the retinal epithelium to restore it.

Kühne took a coloured rabbit and fixed its head and one of its eyeballs at a distance of a metre and a half from an opening thirty centimetres square, in a window shutter. The head was covered for five minutes by a black cloth and then exposed for three minutes to a somewhat clouded midday sky. The head was then instantly decapitated, the eyeball which had been exposed was rapidly extirpated by the aid of yellow light, then opened, and instantly plunged in 5 per cent. solution of alum. Two minutes after death the second eyeball, without removal from the head, was subjected to exactly the same processes as the first, viz., to a similar exposure to the same object, then extirpation, etc.

On the following morning the milk-white and now toughened retinæ of both eyes were carefully isolated, separated from the optic nerve, and turned; *they then exhibited on a beautiful rose-red ground a nearly square sharp image with sharply defined edges; the image in the first eye was somewhat roseate in hue and less sharply defined than that in the second, which was perfectly white. The size of the images was somewhat greater than one square millimetre.*

Professor Bunsen was amongst the witnesses of this beautiful experiment.—*London Med. Record*, Feb. 15, 1877.

Materia Medica and Therapeutics.

Physiological Action of Nitrite of Amyl.

Mr. W. Lemon Lane (*British Med. Journ.*, Jan. 27, 1877) submits the following deductions, which are the result of a series of experiments performed to ascertain the physiological action of nitrite of amyl.

1. Amyl-nitrite, when inhaled in small quantities, produces reddening of the face in man, and of the nose and mouth in kittens; this action is due, according to Brunton, to the dilatation and overfilling of the arterioles.

2. When inhaled by kittens in large quantities, it produces cyanosis of the nose and mouth along with insensibility. The cyanosis arises from overdistension of the venous system, this being due to the engorged arterioles propelling the blood into the veins, while the insensibility is probably caused by overdistension of the venous system and the heart.

3. When inhaled in small quantities, it produces recovery from chloroformic insensibility, by dilating the arterioles of the brain, and thus removing the cerebral anæmia due to the chloroform.

4. When inhaled in large quantities, instead of producing recovery from chloroformic insensibility, it not only retards it, but it may cause death by paralysis and overdistension of the heart, and engorgement of the venous system.

5. It causes a rise of temperature when inhaled in small quantities, by the increased amount of blood in the arterioles causing an increased tissue change in the body.

6. In large doses (inhaled) it produces a fall of temperature.

7. It also helps to produce recovery from the chloroformic insensibility by raising the temperature, which is always lowered by chloroform, and by removing the paralysis of the heart due to chloroform; this action is well seen by the nitrite of amyl making the heart's beat fewer and its sounds louder.

8. Death is caused chiefly by paralysis of the heart, which is shown by all its cavities being distended, and by engorgement of the venous system.

—

The Influence of Digitalis on the Temperature, Pulse, Arterial Tension, and Respiration.

Dr. ALFRED LOMBARD has made this the subject of an inaugural thesis, recently abstracted in *Le Progrès Médical.*

As a pupil of Feltz and Ritter, and under their direction, he performed numerous experiments.

The infusion of digitalis was made use of, introduced directly into the venous system. The exact relationship between the weight of the animal and the substance injected was made out. The temperature was taken in the rectum; Marey's apparatus was used to register the pulse; and a special contrivance of M. Feltz was employed to measure the arterial tension.

From the researches of the author it appears that, first, the most constant effect of digitalis, whether administered in toxical or medicinal doses, is to produce a change of arterial tension. This invariably diminishes directly the digitalis begins to produce its effects. Secondly, the constant and progressive weakening of the arterial tension shows that digitalis acts primarily upon the heart, and has a direct effect upon the cardiac ganglia. Thirdly, with the diminution of tension the temperature falls step by step. Fourthly, as soon as the system has been brought under the influence of digitalis, the pulse falls suddenly and very considerably. Fifthly, the respiration becomes irregular.

[Amongst the various conclusions come to by the author, there is only one which can be considered really new: that, namely, with regard to the seat of action of digitalis being the principal agent in its effects, a direct action upon the motor nervous centres of the heart. The conclusion seems to be well drawn; in any case Dr. Lombard's labours have been conscientious and well conducted, and the results arrived at are supported by a very great number of experiments.—*Rep.*]—*London Med. Record*, Feb. 15, 1877.

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The External Use of Chloral-hydrate.

In the *St. Petersburger Medicinische Wochenschrift*, December, 1876, Dr. TH. DMITRIEFF states that he has arrived at the following results with regard to the external use of chloral-hydrate. 1. It arrests various fermentative processes, such as ammoniacal and lactic acid fermentations, even in so weak a solution as one per cent. 2. A one per cent. solution applied to wounds discharging unhealthy offensive secretion quickly removes the bad smell; while at the same time (3) through its stimulating properties it produces a prompt development of healthy granulations, and (4) hastens cicatrization. 5. Chloral-hydrate applied externally has a locally sedative action. The observations were made partly on dogs and partly on men.—*London Med. Record*, Feb. 15, 1877.

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On the External Use of Salicylate of Iron.

Mr. ROBERT KIRK, House Surgeon at the Royal Infirmary, Edinburgh, contributes to the *Edinburgh Medical Journal* (Feb. 1877) a short article on this subject.

Salicylic acid and its compounds have been used for some considerable time as antipyretics and antiseptics, and as such have fulfilled very satisfactorily what was demanded of them; but still they had the disadvantage, shared also by carbolic acid, of being in no way astringent, and therefore of allowing free capillary bleeding after operation, unless pressure was employed. An astringent antiseptic seemed therefore to be desirable, and after experiments with a number of salts, trial was made of the salicylate of iron, which seems to have both actions in an almost equal degree.

Mr. Kirk tells us that by adding salicylate of soda to a saturated solution of sulphate of iron a double decomposition takes place, and sulphate of soda and salicylate of iron are obtained in solution, from which the latter may be easily separated by crystallization. This is, however, quite unnecessary, as the solution just mentioned is a most convenient form for application, and one which can be prepared in a few moments. Of a bright claret colour, with no smell, and with hardly any irritant properties even when used in strong solutions, it is not so repulsive as some of the more generally used disinfectants and antiseptics. Its antiseptic properties are most easily demonstrated, for urine containing but a small quantity of this salt in solution will remain long free from bacteria when exposed to the same influences as those which are conducive to the life of bacteria generally.

The cases to which this salt has been applied have generally been open sores, often with more or less unhealthy action going on, but in each the progress towards recovery has been very rapid after the first few days. As an illustrative case Mr. Kirk gives the following:—

Sarah W., age 67, was admitted into Ward 1, Royal Infirmary, under the care of Mr. Joseph Bell, on 31st October, suffering from two varicose ulcers on the right leg. The larger ulcer, about the size of half-a-crown, was situated midway between the ankle and knee on the inner side of the limb; and the smaller, the size of a florin, was about two inches lower. The surrounding parts were inflamed, while the ulcers themselves were devoid of granulations, and painful. Rest was at once enjoined, and black wash was employed until the end of November, when the salicylate of iron was employed instead. The ulcers were then as large as florins, and still were almost free from granulations. For the first three days after the solution was employed, there was but little evident progress made as far as the size of the sores was concerned; but the surfaces became more healthy, granulations formed, and the edges became softer. Cicatrization now followed rapidly, a decided difference being noticed every day, and the patient was dismissed on 13th December, the sores being completely healed, although the skin surrounding them was covered with a red crust, which, however, was rapidly removed with tepid water. The dressing used in this case was that of lint soaked in the solution, and covered with gutta-percha tissue. Were I disposed, I could easily multiply cases of cures as rapid as that quoted, but I do not think this at all necessary, as the case, I think, speaks for itself.

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Phosphate of Iron with Citrate of Soda.

Dr. MARTENSON (*Pharm. Zeitschrift für Russland*, No. 10, 1876; abstract in *Allgemeine Medicin. Central-Zeitung*, No. 75) states that he has examined the combination of phosphate of iron and soda with citric acid, described by Creuse in the *American Journal of Pharmacy* (4th series, vol. iii.), and finds that it is readily soluble in water and does not leave a taste of iron. An experience of its use, extending over two years, leads him to regard it as an excellent preparation of iron.

The compound of phosphate of iron with citrate of soda is of a clear olive-green colour, and is soluble in water in all preparations. In acid solutions (citric, hydrochloric, and acetic acids) it becomes green; in alkaline solutions, brown. A concentrated aqueous solution can be kept a long time without decomposition. The taste is faintly saline; when citric acid is added, pleasantly sour. The salt contains 25 per cent. of iron; its solution passes

completely through parchment paper and animal membranes, so that there can be no doubt of its capability of being absorbed. It is given in simple syrup, in seltzer or soda water, or in the form of pill or powder.—*London Med. Record*, Feb. 15, 1877.

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Warburg's Tincture.

Dr. W. H. BROADBENT gives (*Practitioner*, Feb. 1877) two examples of the effect of Warburg's tincture[1] which have come under his observation.

The first is that of a gentleman, seen with Dr. Clarke, of Huddersfield, whose medical history is briefly as follows: His father suffered much from gout, but lived to the age of eighty-four or eighty-five. He had himself had little illness of any kind, but at about the age of forty he suffered from vertigo, which for many months almost rendered him incapable of business. It was considered to be gouty, and he was forbidden to take beer, wine, spirits, sugar, or butter. For twenty or twenty-five years he obeyed this injunction strictly. At the age of about seventy he began to take a little wine occasionally, and after seventy-five he drank a single small glass of port almost daily. Early in 1876 he took cold and had bronchitis, and together with this a febrile condition, attended with severe pains in the limbs, which were worse at night. He was unable to sleep, had no appetite, vomited his food, suffered from constipation, and in consequence rapidly lost strength. At length, while taking small doses of iodide of potassium with ammonia, colchicum, and bark, given on the hypothesis that the pain was of gouty origin, he began to improve. On his eightieth birthday, which was in the second week of March, he was convalescing slowly, and was sitting up in his room for the second or third time; he was wishful to show, by walking without assistance, that he was not so helpless as he was made out to be by his family; he had miscalculated his strength, however, and over-balancing himself, fell backwards, striking his hip against the fender. The shock was so great that it was feared he would not be got back to bed alive, and its immediate effect will be understood from the fact that the secretion of urine was *suspended*[2] for twenty-four hours, and when it first began to be formed it was scanty, escaped involuntarily, and was ammoniacal. The pain in the injured hip was so great that complete examination was impracticable, and it was supposed for some time that there was intra-capsular fracture of the neck of the femur.

The shock of this accident brought back the old symptoms, pain, sleeplessness, restlessness, inability to take food, constipation, and vomiting. The patient was rendered so helpless by the pain in the hip, caused by the injury, and the pains in the limbs, together with weakness, that he was unable to turn in bed, and the lower extremities were for a time absolutely powerless, and had to be shifted for him. He rallied from the immediate effects of the fall, and having shown the constitutional vigour which this implied, it was hoped he would continue to improve. This, however, was not the case, the helplessness continued, and, worn out by pain, sleeplessness, and inability to take food, the strength rapidly failed, the desire for, and expectation of, recovery, which had hitherto been a great source of hope, ceased, and for the first time the mental faculties became impaired, and there were forgetfulness, wandering, hallucinations, etc.; the pulse was frequent and weak, and the tongue became dry. It was observed that there were febrile accessions, attended with flushing of the face, but not giving rise to any notable elevation of temperature, and the state of the case appeared to be that while the heart and vessels were wonderfully sound, the kidneys healthy, the nervous system vigorous, the strength was being worn out by suffering, sleeplessness, and fever. This was exactly the condition in which, as it seemed to us, Warburg's tincture might find its application, and, everything else having failed, it was resolved to make trial of

[1] For formula see American Journal of the Medical Sciences, Jan. 1876, p. 256.

[2] It may be well to state that it was not mere retention of urine, but actual suspension of secretion.

it. This was Sunday, April 9th, but it was not till the following Thursday that the tincture could be procured, by which time it appeared too late for any remedial measures. During Thursday night the patient was wildly but feebly delirious; he had ceased to recognize the members of his family; there were general muscular tremor and jactitations, and all the signs of approaching death. Two doses of the tincture were given on Friday morning, but without any hope of good result, and I was summoned by telegraph. On my arrival in the afternoon, instead of finding the patient moribund or dead, as I feared, he was in a quiet sleep and bathed in a warm perspiration, while the whole room was fragrant with the aromatic constituents exhaled by the lungs and skin. The sleep continued for twenty-four hours, interrupted only by the administration of food, and he woke from it refreshed, free from pain, and quite clear in mind, though, of course, extremely weak. From this time there has been slow but continuous improvement, and the patient now eats and sleeps well, is free from pain, cheerful, and in the full enjoyment of his intellectual faculties, though he remains very helpless as regards muscular power, and appears indeed to have had spinal meningitis, as there is some degree of wasting and contraction of the limbs. One good effect of the tincture, which he has taken in small doses ever since, has been its mild but efficient aperient action on the bowels.

A second case, in which it appeared to me that Warburg's tincture certainly saved life, was that of a boy of six, in whom scarlet fever was accompanied by extreme frequency of pulse, and especially of respiration. A favourable opinion as to his chances of recovery was entertained, notwithstanding a pulse of 160 to 180, and respirations 60 per minute, chiefly because his aspect was good and the mind fairly clear, the beats of the pulse also remaining distinct, till the morning of the seventh day, when the pulse was not only more frequent than ever, but the beats ran into each other, and the boy was scarcely conscious. On the evening of this day the aspect of the boy was still worse, and indeed hopeless. Warburg was now given; the first dose was vomited, but a second was retained. Next morning, though he had a death-like pallor and the pulse was scarcely perceptible, the beats were distinct. The stomach rejected everything, and the Warburg was given by the rectum with beef-tea and brandy, and in spite of complications the boy recovered.

My chief purpose in this communication, however, is not to extol Warburg's tincture. Nothing, indeed, that I could say would add weight to the testimony of Professor Maclean. I have sought, as is my habit, by study of an undoubted therapeutical fact, to arrive at the principles on which the effects are produced, and if possible to ascertain the mode of action of the remedy.

As will have been seen at once, even without the remarks quoted from Professor Maclean, the main ingredient is quinine, and one great principle of its action is the combination of quinine with powerful aromatics. It is aperient also from the aloes, rhubarb, etc., contained in it, and this may contribute to its usefulness, though in a minor degree only. It is a fact with which physicians are perfectly familiar, that the action of quinine is often aided by stimulant and aromatic adjuvants—the compound tincture of bark is testimony to this; perhaps the advantages of the combination have not been borne in mind in the same degree when large doses of quinine have been given for the purpose of reducing pyrexia or restoring power in adynamic conditions, as some forms of pneumonia. A large dose of quinine sometimes not only gives rise to the usual symptoms of cinchonism, but produces great prostration, and I have distinctly seen harm result. It appears to me probable that this can be counteracted by aromatic stimulants, and after the experience with Warburg which I have just related, I tried, in a case of extreme prostration at the end of a relapse of enteric fever, large doses of the liquid extract of cinchona and of ether combined. The boy could scarcely have been more pale had he been dead; the temperature was only slightly raised; he was pulseless and unconscious, and did not rally at all when stimulants were given. He began to improve as soon as the bark and ether were given, and eventually recovered. I think a large dose of quinine alone would have killed the boy, and that the ether alone would have failed to raise him.

A combination I have long employed in giving large doses of quinine is with very strong black coffee and brandy.

But there is a second therapeutical principle, of which advantage is taken in the employment of Warburg's tincture—this is *concentration*. The maxim is as old as Hippocrates: Ad extremos morbos, extrema remedia exquisite optima (Aphorism vi.). We hear much of the physiological administration of drugs, by which is usually meant the exhibition of small and frequent doses, though no doubt it was really intended by the framers of the phrase to indicate the giving of a remedy in such doses and at such intervals as are indicated by its energy of action, rate of elimination, etc. But there is a *therapeutical administration* of drugs, to which physiological experiment affords no clue, and for which the condition of the patient is the indication.

In *post-partum* hemorrhage a drachm of laudanum will rally the exhausted strength, restore consciousness, rouse the uterus to action, and arrest the bleeding when six times ten minims in water would allow the patient to bleed to death. In syncope a tablespoonful of undiluted brandy will have an effect which twice the quantity drowned in water would fail to produce. We defeat a paroxysm of ague and cut short the disease, or suppress neuralgia, by a single large dose of quinine, when repeated doses of average amount have entirely failed.

The instructions given with Warburg are that the bowels shall have been freely open, that no food shall have been recently taken, and that two doses shall be administered without dilution at an interval of two or three hours, nothing being taken between but a little brandy or beef-tea, and this only if required by the state of the patient. The remedy thus enters the empty stomach in a highly concentrated state, and is no doubt rapidly absorbed. Its remarkable effects are distinctly due to the powerful impression made upon the nervous system.

I may call to mind other examples of striking curative effects due to an impression on the nervous system, and it is worthy of remark, how little specific this impression may be, provided only that it is energetic. It is a well-known fact, that strong spirit of camphor, taken on a piece of sugar, will often arrest severe and dangerous diarrhœa, especially in children, sometimes, indeed, when other remedies have failed. Cajeput oil, and probably other essential oils, will sometimes have the same effect. Now what is the condition of success, and what the order of phenomena observed? There is a sense of heat, almost of burning, in the mouth, throat, and stomach; to this succeeds excitement of the pulse, a glow of warmth throughout the system and over the surface, flushing of the face, and often perspiration. Let these effects be produced almost by whatever means, and the desired result usually follows. I have been assured by competent observers that the premonitory diarrhœa of cholera, and even the declared disease at the outset, can be cut short by a combination of strong stimulants, such as ammonia, ether, spirit of lavender, and tincture of capsicum. "You must bring tears into the eyes," said one of my informants.

I have already mentioned the employment of quinine in large doses in intermittent and remittent fevers. Its remarkable influence on the temperature is another illustration of what I have spoken of as the therapeutical administration of a remedy. A single dose of 20 grains will often bring down the temperature in enteric fever from 105° to 100°, or lower, and keep it thereabouts sometimes for twenty-four or thirty-six hours, whereas the same amount distributed over the twenty-four hours would have little appreciable influence.

The effect of salicylic acid again in acute rheumatism appears to depend greatly on the way in which it is employed. I have yet to see the case of genuine acute rheumatism without complication in which the pain is not entirely gone, and the temperature normal, after six consecutive doses of 20 grains, at intervals of an hour, on two successive days.

I may perhaps be permitted to mention a more modest application of the therapeutic principle of following up an effect, so as to make a decided impression, not for a moment comparable to those just described, but useful in its place. A well-known treatment of catarrh, or of the early stage of bronchitis, is to give acetate or citrate of ammonia with perhaps free ammonia,

vinum ipecacuanhæ, spirit of nitrous ether or of chloroform, and some preparation of opium. One can only give a certain amount of such a mixture at a dose, but by giving a series of doses, say at eight, nine, and ten P. M., instead of every three or four hours, we may often cut short an attack which would otherwise go on for days. I have occasionally seen striking instances of prompt relief, especially in the case of patients in whom catarrh was accompanied by asthmetic dyspnœa, tincture of belladonna being then added.

One more illustration may be given. It is common in fever, whether enteric or typhus, to have as a complication tympanites, which may be quite independent of peritonitis or perforation of the bowel. The treatment I have found most useful in relieving this condition is opium. Occasionally the distension of the intestine comes on very suddenly, when it is not only a source of distress and danger, but carries very grave prognostic import. My interpretation of the phenomenon is that it is one of the manifestations of nervous shock, and that it indicates paralysis of the sympathetic system, with consequent loss of tone in the muscular wall of the bowel allowing the distension to take place. It constitutes one of the emergencies to which the Hippocratic maxim applies, and under such circumstances I do not hesitate to give and repeat a drachm of tincture of opium. I can recall to mind many instances in which by this treatment the tympanites has been dissipated in a few hours, with a corresponding improvement in the general condition of the patient.

It will have been obvious that the opportunity for the display of the curative powers of Warburg's tincture—and when I name this I do so as representing a combination of quinine with powerful aromatic stimulants of proved efficacy—is found in conditions in which there is no organic disease necessarily fatal, and no local imflammation adequate to the production of the symptoms, but the nervous system is overwhelmed by some poison, as in malignant remittents, or oppressed by pyrexia, or sinking under some depressing influence.

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A Simple means of lessening the Pain attending Blisters.

The practice of blistering in the treatment of acute articular rheumatism would meet with much more favour in this country if pain and, in certain cases, strangury and slight hæmaturia, were not inherent to this mode of treatment. A hypodermic injection of morphia relieves the pain, but has no effect upon the urinary troubles. To alleviate the one and prevent the other, M. Ernest Besnier proposes the following plan. Take care that the blister is applied in the early morning; those convenient ones which are covered with a sheet of oiled tissue paper will cause very little suffering, and never give rise to those vesicatory or renal troubles which are now and then so severe and painful, provided the blister be removed after a few hours, five to ten at the outside, as soon as the epidermis begins to rise slightly and partly, which we may recognize by the skin becoming pearly and irritated. The plaster must then be removed (a very few hours' application is sufficient for a child or a thin-skinned person), and its place must be supplied by a piece of blotting paper very thickly coated with cerate or cold cream. The vesication continues almost painlessly, and the blisters rise nearly as well as if the cantharides had been kept applied. The practitioner who does not disdain to attend to such minute details will gain the thanks of his patient, and more especially of those who have been previously treated by such inhuman proceedings as are common where blistering is employed.—*London Med. Record*, Feb. 15, 1877.

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A New Method of Administering Quinia.

Dr. W. E. Forrest, Resident Physician at the Presbyterian Hospital, New York, states (*Medical Record*, Dec. 23, 1876) that he had a patient in the hospital with chronic malaria, who could not take quinia for any length of time without being "almost crazy from it," as she expressed herself, and at the suggestion of Dr. Burrall, the visiting physician, he determined to use, in this case, bromohydric acid as recommended by Dr. Milner Fothergill (*Am. Journal Med. Sciences*, October, 1876, p. 566).

It was given in ʒss doses, with quinia in capsules, and with the happiest result. The roaring in the ears and the dizziness disappeared, and the patient no longer objected to being cured by quinia.

Since then, Dr. Forrest has tested the medicine in many cases, and it has never failed. Dr. H., of Washington, D. C., entered the hospital suffering from malarial poisoning and from large doses of quinia, and was much pleased at being relieved from the cinchonism by the acid. The tinnitus aurium following the exhibition of quinia seems to be due to an active congestion of at least some parts, if not the whole of the brain, as Dr. D. B. St. J. Roosa has observed that after taking ten or fifteen grains of quinia the membrana tympani and malleus are markedly injected. It had before been noticed that the administration of quinia aggravated the symptoms of otitis media and other aural affections.

It may be that hydrobromic acid, being analogous to bromide of potassium, may, like bromide of potassium, cause contraction of the bloodvessels, and thus prevent the bad effects of quinia. However this may be, it acts in the happiest manner.

There is a growing mistrust among the laity towards quinia. All sorts of stories are reported concerning its harmful effects, such as causing permanent deafness, impairing the eyesight, affecting the brain, etc. etc. Nor are these opinions wholly without reason, for the roaring in the ears, the dizziness, the trembling limbs, the sensation of being in a storm at sea generally, is anything but pleasant and reassuring to a person distrustful of "allopathy." It is, then, the duty of the profession to keep our faithful ally quinia from falling into disrepute when it can be done by so simple a means as the use of this acid.

In giving quinia in solution, Dr. Forrest uses the following formula:—

℞.—Quinia sulph. ʒj; hydrobromic acid, aquæ, āā ʒiss.—M. Sig.—Two teaspoonfuls contain five grains of quinia.

The formula for preparing the acid is as follows: Dissolve ʒx, ʒvj, grs. xxviij of potassæ bromidi in water Oiv, add ʒxiij, ʒj, grs. xxxvij of tartaric acid. The *acid remains in solution*, and potassa bitartrate is precipitated.

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Hydrobromate of Quinia in Diseases of Children.

In a communication to the *Allgemeine Medicin. Central-Zeitung* (No. 53, 1876), Dr. STEINITZ, of Breslau, gives the results of his experience of the use of hydrobromate of quinia in children's diseases.

He used it in an extensively prevailing epidemic of whooping-cough, giving it generally in a mixture composed of three to five parts of the hydrobromate in one thousand of syrup; the dose being a teaspoonful every two hours. In no case was it necessary to use any other remedies. The whooping-cough had in twenty-three cases lasted on an average ten weeks, and in fifteen others twelve weeks, and in the use of the remedy the paroxysms became, in the course of a week, less frequent and milder. No after-effects on the alimentary canal were discovered. Three deaths occurred, all in very atrophic and scrofulous individuals, in whom other complications were present. Dr. Steinitz takes the opportunity of remarking that he prescribed in several cases the extract of castanea vesica, which has been extolled as a remedy, but without good results.

He also used the hydrobromate of quinia in nine cases of spasm of the glottis. Three of the patients died after only a few paroxysms. The remaining six recovered. The medicine was prescribed as stated above, and was borne well. In all the six cases the attacks diminished, at times varying from the third to the fifth week in intensity as well as in frequency; and the duration of the disease was in no case longer than from four to six months. This result is satisfactory when compared with the previous course of the disease under the use of other medicines, such as bromide of potassium, oxide of zinc, valerian, and musk, none of which could be borne for several months together.

Dr. Steinitz has also given the hydrobromate of quinia in the dental convulsions of children, but cannot as yet speak of its efficacy in this malady. He regards it, however, as deserving a trial.—*London Med. Record*, Feb. 15, 1877.

Medicine.

Salicylate of Soda in Diabetes.

Dr. MÜLLER WARNEK, Assistant-Physician in the Clinic of Professor Bartels at Kiel (*Berliner Klin. Wochenschrift*, 1877, Nos. 3 and 4), sums up the results of a prolonged and careful observation of two cases of diabetes which were treated with the above drug, as follows: 1. Salicylate of soda can completely remove the symptoms of diabetes mellitus, although its action does not always appear to be permanent. 2. The symptoms of diabetes disappear more rapidly the larger the dose that is administered, and the longer the drug is continued in any particular case. 3. In moderate daily doses (nine to ten grammes per diem) the initial influence of the salicylate upon the diabetic process appears to become gradually exhausted, whereas large daily doses (fourteen to sixteen grammes) exert an increasingly powerful effect upon it. 4. Salicylate of soda can be administered in large daily doses in chronic diabetes mellitus for a long period without any special disturbance of the general health, and if any symptoms of poisoning should occur, they rapidly and completely disappear if the remedy be discontinued for a short time. 5. Salicylate of soda appears to have only a slight irritating effect on the kidneys in diabetes, even after prolonged administration. Dr. Müller-Warnek gives full details of his cases in the article referred to. Attention was first called to the use of salicylate of soda in diabetes by Professor Ebstein, of Göttingen, in No. 24 of the *Berliner Klin. Wochenschrift*, 1876. In his cases the salicylate in doses of five to ten grammes per deim produced considerable diminution, and even at times complete disappearance of the sugar from the urine, and he found that still smaller doses maintained the good effects of the earlier large ones.—*Med. Times and Gaz.*, Feb. 10, 1877.

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Hysteria in Man.

Dr. P. DESPINE (*Annales-Médico Psychologiques*), after remarking that, frequent as cases of ordinary hysteria are, the acute form of the disease is but rarely met with, and very seldom in man, relates a very remarkable case occurring in a young man.

M. X., æt. 24, of dark complexion and nervous temperament, was attacked by violent convulsions after a sudden fright caused by a fire of petroleum. In the interval between the convulsions his pulse was feeble, appetite poor, tongue furred, and he complained of a severe pain in the suboccipital region. He was troubled by the obtrusion of sad ideas, painful scenes of his life presenting themselves to him. He spoke of the death of parents and friends, wept, and had momentary hallucinations, in which he saw flames. The attacks from which he suffered manifested three forms—a state of somnambulic sleep, a conscious convulsive attack, and an unconscious convulsive attack.

1. The patient passed all his nights in this somnambulic sleep, and all his senses seemed to be suspended; no amount of pinching, pricking, or shouting seemed to have any effect upon him. The eyes were closed, and on opening the lids, the eyeballs were turned up and convulsed. It occurred to us to try the effect of the magnetism of touch, not that we estimated its effect at all highly, but solely to see what might happen. We placed the palmar surface of one of our thumbs on the palmar surface of one of his thumbs, and then spoke in a deep voice. At the third time of speaking, to our great astonishment, and that of those about him, he woke up.

2. The conscious convulsive attack showed itself by the most violent shaking of the upper limbs, gesticulations, and jerky cries. These spasmodic phenomena lasted an hour, and then suddenly ceased. Consciousness was perfect, as the patient could afterwards tell all that had gone on around him. Being one day present, we applied our thumbs as before, and at once stopped the attack, which had usually lasted an hour.

3. The unconscious convulsive attacks commenced by violent convulsive movements in the limbs, so that three people were required to hold him. Then he would walk rapidly about, gesticulating, as if under the influence of hallucinations of fear. The eyes were always fixed and sometimes closed fast. The pupils, as in ordinary somnambulism, were much dilated, but sensitive to light. With eyes fixed, the patient saw objects, for he moved rapidly about in a small room without upsetting the furniture. With closed eyes he once in our presence threw himself towards the door, seized the handle, and opened it, without groping. These attacks lasted for an hour and a half, and then suddenly ceased. On recovering, he did not understand the inquietude of those about him; did not know what had passed, simply feeling bruised and tired. The most considerable attack occurred in the morning, after the night's sleep, leading one to think that the morbid activity of the nervous system, accumulated during long repose, discharged itself in a violent explosion. The sleep of the day did did not seem to lessen the severity of the unconscious attack. Indeed, nothing seemed to appease the nerve-storm; but after twenty days the attacks seemed to lessen in severity, and the unconscious convulsive attacks slowly assumed more and more of the somnambulic character. In these attacks he did things much more rapidly than under ordinary circumstances, and performed many automatic acts. I cite one. With closed eyes he left the room, rapidly walked into the bath-room, turned on the water, took the thermometer from the nail, plunged it into the bath, looked at it, and replaced it on the nail. All these acts were done with the greatest precision. On the twenty-third day of the disease he commenced certain acts, which he continued to repeat three or four times a day. He would walk rapidly into his father's bedroom, kneel down at the bedside, make the sign of the cross, and his lips were seen to move, but no sound was heard. Making again the sign of the cross, he would return to his room. He was quite unconscious all the time, for we pinched and pricked him severely without any result, and the odour of strong ammonia had no effect. A young servant-maid, meeting him in one of his somnambulic walks, seized his hands to make him sit down, at the same time asking him mechanically How he felt. To the great surprise of those about he answered her, and this was the first time he had spoken during a somnambulic attack. The maid then asked him several questions, to which he gave answers. If, however, she did not hold his hands, he did not reply. He told her that the bromide of potassium cured him in a former attack. He said that in eight days he would be better, and that he should recover slowly. The maid asked him who was in a certain room at the top of the house, and he said, "A young girl sleeps there," which was true. It was found that he could only give answers to questions of which the maid herself knew the answers. On the twenty-fifth day, the number of conscious and unconscious attacks were equal. He complained that the pain at the back of the neck was as bad as ever. His treatment was by baths, bromide of potassium, and valerian. The religious attitude which we have mentioned as occurring in the somnambulic sleep became more pronounced, and it is curious to observe that it did not seem to have any origin in previous habits of habitual prayer, but may have arisen from irritation in cerebral cells, near what we may term the religious centre. During the conscious attacks a curious phonomenon was observed. When the patient micturated, during the act he turned round two or three times, and would have fallen if not sustained. Since he had discovered the magnetism of the maid's touch upon him (that is to say the action of a person in health upon the nervous system of a diseased person) he had asked to be sent to sleep when suffering from a convulsive attack. To obtain that result the maid took both his hands, and in two or three minutes the convulsions ceased, and he fell into a somnambulic sleep. When in this state, and the eyelids were opened, his eyes were seen to be turned upwards in a convulsive manner.

On the thirty-first day of his illness, in the unconscious convulsive attack of the morning, he spoke for the first time spontaneously. He called Martha (the maid's name) several times, and placed his hand to his ear, as if listening. He then said that Martha had taken his coffee to the kitchen, and directly afterwards that she had drunk it. On inquiry this was found to be true. At

the time when he called Martha some one knocked at the door. He said: "It is not Martha, but her sister," which was true. The hysterical nervous affection is so mobile, and its manifestations so various, that one often sees nervous phenomena of the most opposite character and varied intensity substituted for each other. So in this patient, when, in an attack, his habitual state was one of paralysis, in a moment it turned to exaggerated and excessive sensibility. To obscured hearing succeeded hyperæsthesia of that organ, and cutaneous anæsthesia succeeded painful hyperæsthesia. From this case one sees how necessary it is to study the phenomena of somnambulism—a state which seems to be closely allied with hysteria; not to see the somnambulist accidentally at one particular period, but to observe him through all the phases which his nervous state presents.

Having the opportunity of studying the therapeutic effect which the magnetism of touch had, we shall indicate our observations upon this patient. We do not believe that the observation can apply to every case of acute hysteria, because that disease is individual to a supreme degree. But when we saw the influence this person had upon our patient, we recommended the employment of her influence to stop the convulsions. This is what was done at the commencement of an attack. Martha took his hands, and the spasms ceased. When the spasms ceased, she asked, still holding his hands, if she might awaken him. "No, not yet," he answered. Ten minutes afterwards he said she might; and she, holding his hands, said, "Awake." He instantly opened his eyes and became conscious, but did not remember what had passed. When told what had passed, he recommended us not to stop the spasms, and not to magnetize him when they had ceased. To what conclusion could we come from these facts as to the therapeutic action of magnetism and somnambulism in acute hysteria? 1. As regards the spontaneous somnambulism, provoked by the disease itself; the state during which the unconscious attacks occurred has not any salutary action upon the disease, because it is part of the disease itself. This somnambulic sleep—the long repose of the night—not being invaded by spasms, the spasms are stronger which follow this sleep. 2. The magnetic action of a healthy person upon our patient arrested all the spasms; but the arrest of the movements was hurtful to the patient; he was heavy and fatigued on awakening. From this we may conclude that the nerve-storm, once commenced, must not be stopped, for it may be a source of relief, a safety-valve for the escape of nervous erethism, that is to say, of the disease itself; and that little by little it would exhaust itself. We therefore recommended the discontinuance of the magnetic influence. Our patient had said, when in an unconscious state, that in eight days he should be better. His attacks were not so severe after this, and a few days later, about midday, while in a conscious state, he fell into an ecstasy; prayed to the Virgin, commending himself to our Lady of Salette. He asked for water from that pilgrimage, sprinkled himself with it, and, still holding the bottle, asked for bromide of potassium, which he put in the bottle, and then drank off the contents. Standing for some time in an ecstatic attitude, he said he saw the Virgin with two angels at her side (as represented in certain images). Taking the hand sof his cousins, he said, "Holy Virgin, bless these and my father." Then, bending in the attitude of listening, he said, "Yes! yes! I hear, yes." The ecstasy ended, and he did not that morning have his ordinary attacks. Two days later, he had hallucinations, in which he saw many of his relations who had long been dead. His attacks were now all in consciousness, and he still had the somnambulic attacks, still complained of suboccipital pain. On May 1st, the day which he had named for his recovery, he had again an ecstatic attack, in which he said he saw the Virgin. Being present, we placed our finger upon the left eyeball, and turned it well outwards. We then asked what he saw, and he said, "Two Virgins," and pointed to where he saw them side by side. This experiment we repeated several times with the same result, which proves that patients the subjects of hallucinations report by their organs of sense the impressions which internal causes produce in the sensory ganglia. A moment afterwards he closed his eyes, and then putting his hand up to them said, "I see the Virgin on the back of my head;" probably as when one has looked at

a luminous object, we have seen it still on closing the eyes. The retina seemed to have been impressed by the subjective image in the same way as by a real image, external to the body. This attack lasted an hour, and the hallucinations occurred at the early part of it. When the hour struck, he invoked the Virgin, and said, "It is finished." From this time the patient began rapidly to recover, although during two or three months he suffered from a slight return of some of the symptoms. By his friends and himself his recovery was looked upon as a direct miracle, due to the intervention of the Virgin. Dr. Despine remarks, that the prediction of recovery is found in other cases quite unconnected with any religious manifestations, and that, although religious manifestations of an automatic origin occurred in his patient, which presented an agreeable and easy explanation of his recovery to those related to him, such solution must be rejected by men of science. The ecstatic phenomena with hallucination were here pathological, and were of the same order as the spasms and the sensorial anæsthesia and hyperæsthesia. These various phenomena, changing frequently during the same attack, were no doubt due to the portion of the nervous system which was invaded by the nerve-storm.

Dr. Silvio Venturi, assistant in the Psychiatric Clinic at Padua, relates in the *Gazetta Medica Italiana della Provincie Venete* (abstract in *Lo Sperimentale*, January) the following case: A. M., aged 31, had been addicted to onanism from his youth; he had recurrent headaches, gastric disorder, nocturnal emissions, etc. He was immoderately addicted to wine and venery. Six years ago, he had convulsive attacks of spasm in the cardiac region, which became worse, in spite of the use of bromide of potassium and chloral. Having at last recovered from these, under treatment in hospital, he presented the following condition. His general aspect was robust; his face had an appearance of stupidity; vision was normal, but the eye was abnormally sensitive to strong light and to transparent objects, such as a glass of water. The glands in the neck were indurated. The region of the stomach was very sensitive; touching it produced troublesome hiccup. The heart sounds were feeble, but there were no abnormal murmurs. Palpation and percussion of the chest and abdomen gave negative results, except that they produced hiccup. His intellect, at first active, later became dull; articulation of words was sometimes imperfect. He presented a condition of childish fatuity, crying and laughing from slight causes. Of a rather irascible temper, he had attacks of almost convulsive rage, with grinding of the teeth, groans, which were appeased by a smile or a caress. He had illusions of vision. On being desired to restrain himself, he did so with difficulty, and then felt vague painful sensations in his body. Generally of a melancholic disposition, he despaired of his health. Besides sensorial illusions, there was hyperæsthesia of the special senses; he had noises in the ears; and was very sensitive to music, so that merely whistling or singing brought on an attack. The sense of smell was excited by the slightest odour. Touching any part of his body produced active reflex movements. He had constant headache, from the sagittal suture towards the left side. His attacks were sometimes rare, sometimes frequent; slight or very severe; they began spontaneously, or were produced by emotion, contradiction, or any trifling cause. They were characterized by general tremors, protrusion of the tongue, sobbing, disorderly movements of the hands and fingers, and pain in the epigastrium radiating to the lumbar regions. Sometimes these symptoms were accompanied by so many others as to present the appearance of almost every neurosis. Sometimes there was continuous crying; sometimes epileptiform, sometimes tetanoid attacks. He was frequently seized with a rage for running and then stopping suddenly.

He was first treated by Pinali with bromide of potassium, and then came under the care of Professor Tebaldi; the diseased condition, however, continued. The peculiar hyperæsthesia of hysterical patients was well manifested in this case; the injection of simple water was sometimes sufficient to give slight relief. His sleep was broken; the pain was most severe in the spinal region. On two occasions, he had delirium of persecution. The only remedy, out of many, from which he appeared to derive benefit, was the douche. After remaining about two years in the hospital at Padua and the asylum at Venice, he was dismissed slightly improved.—*London Med. Record*, Feb. 15, 1877.

The Treatment of Meningitis Granulosa.

In a clinical lecture published in *La Clinica di Napoli* (abstract in *Lo Sperimentale*, Jan. 1876), Professor SOMMA distinguishes these stages: those of occult predisposition, of manifest predisposition, and of full development of the disease.

In the first stage, the treatment is preventive, and consists in the restoration of the constitution by proper remedies and attention to hygiene. The patient must be kept free from emotions and intellectual labour, and must avoid all causes capable of producing hyperæmia or inflammation of the meninges.

In the second stage, which comprises the premonitory symptoms, the indications are to quiet vomiting by antidyspeptics and alkaline carbonates, to overcome constipation by aperients, to relieve headache by calmatives, and to diminish the slight contractions which occur in some muscles by bromide of potassium and belladonna. Of more importance, however, is the removal of the cause of the symptoms; for this, the remedies recommended in the first stage are to be employed. Dr. Somma regards blisters as highly advantageous; and he recommends the use of iodide of potassium in daily doses varying from 20 to 40 *centigrammes* (30 grains to one drachm) in distilled water.

In the third stage there is little to be done. Some leeches may be applied over the mastoid process, bladders of ice to the heart, and blisters. He advises the use of tartar emetic ointment; and as internal remedies, iodide of potassium, with calomel and other purgatives. The convulsive and spasmodic forms of the disease are treated by bromide of potassium combined with the iodide. When the morbid phenomena come to a stand and symptoms of collapse appear, he gives valerianate of quinine in half gramme doses (7½ grains). In the stage of collapse he uses stimulants freely.—*London Med. Record*, Feb. 15, 1877.

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Tumour of the Brain following an Injury.

In the *Archives Générales de Médecine* for December 1876, M. DENTAN, a Swiss physician, publishes the following case:—

A man, about 50 years old, received, towards the end of the year 1871, a violent blow on the left side of his head by the fall of a street lamp. He was stunned for two hours, but recovered; the wound healed, and he felt no further symptoms for six weeks. He was then attacked by eclampsia, and the fits continued during the winter 1872–73, with severe headache and deafness of the left ear. The fits became less frequent, and he continued his work till January, 1874, when he had a severe attack with vomiting. Another epileptic seizure occurred three days later, and returned almost every hour. While convulsed, the head and eyes were drawn to the right, the right arm was flexed and circumducted, and the right leg stretched out as if in tetanus. There were also convulsions of the left side, but the limbs were amenable to passive movements.

Five days after the severe attack, the pupils were found contracted; respiration was stertorous, the tongue severely bitten, headache and incomplete consciousness between the fits, and involuntary passage of feces. The urine was free from albumen. The pulse was 132, and the temperature 38.8 (102.8 F.). Next day the fits became still more frequent, and the right arm seemed to be paralyzed. The retinal vessels were found somewhat dilated. The temperature varied from 39.8 to 40.6 (103.6 to 105 F.). Death followed the same day.

Post mortem, a tumour 4 to 5.5 centimetres (1⅝ to rather more than 2 inches) in diameter was found adherent to the left frontal bone. It was sharply defined, involved the first frontal convolution, and nearly reached the surface in two places, towards the median fissure, and towards the anterior fossa. It contained three cavities filled with reddish-yellow fluid, was soft in consistence, and reddish-gray in colour, with numerous points of hemorrhage. Microscopically it was found to be a glio-sarcoma. The ventricles were dilated, and the ependyma slightly granular.—*London Med. Record*, Feb. 15, 1877.

Case of Cerebral Syphilis, with Regard to the Diagnosis of Lesions of the Corpora Quadrigemina.

In the *Annali Universali di Medicina* for September, 1876, Dr. FIORI makes a valuable contribution to the literature of visceral syphilis. The patient was a man of robust constitution, a soldier, who had had one attack of syphilis, followed by the constitutional symptoms of the disease. One day, eleven years after infection, he suddenly fell down unconscious, and had clonic spasms of the whole body. This condition was followed by paralysis of the right arm and leg, which, however, disappeared in eight days. The attacks recurred from time to time, and, when he was admitted into the hospital at Turin, presented the following characters. They commenced with tonic contraction of the right sterno-mastoid muscle, causing the head to be turned to the left; then spastic contractions took place in the eyelids, and in the muscles of the left cheek, as well as in those of the neck and limbs, generally on the left side, but sometimes on the right. During the attack, the head remained forcibly turned to the left; the eyeballs were hidden, the eyelids contracted, the pupils dilated; the left angle of the mouth was drawn outwards; the pulse and respiration and general sensibility were normal; speech was impossible, but consciousness was perfect. Each attack lasted from two to five minutes. The earlier attacks were followed by paralysis of motion in the left arm and leg. After the attacks, the patient spoke and moved normally. During the paroxysms he was several times seen while in the hospital to rotate on the longitudinal axis of the body towards the left.

These symptoms denoted a limited disease of the brain; but it was difficult to determine the seat with accuracy. Professor Rovida attached much importance to the movements of rotation. In animals, the so-called *mouvements de manège* are produced by lesion of the peduncles; but, with the complication of other symptoms, it was not possible to limit the disease to these structures. The ocular phenomena pointed to disease of the corpora quadrigemina; and the consideration of the two principal groups of symptoms—contraction and paralysis of the muscles of the face and limbs, and the deviation of the eyes and head—led to the belief that the disease lay partly in the corpora quadrigemina and partly in the cerebral peduncle. As to the nature of the lesion, cerebral hemorrhage, capillary embolism, thrombosis of arteries, disseminated sclerosis, cerebral abscess, partial ischæmia, and softening, and tumour, all had to be excluded; and the diagnosis arrived at was, that the case was one of cerebral syphilis. This was confirmed by the result—almost complete recovery under the use of hypodermic injection of calomel.—*London Med. Record*, Feb. 15, 1877.

Paralysis of the Four Limbs following a Cut with a Knife.

At the meeting of the Société de Biologie on Dec. 23d, 1876 (*Progrès Medical*, Dec. 30, 1876), M. BEURMANN presented a patient whom he had seen in the service of M. Proust. The patient was, on the 18th of November, 1854, struck with a knife on the left upper part of the neck, immediately below the occipital bone, and fell paralyzed in all four limbs. He did not lose consciousness for a single instant; his intelligence was intact, but he could not speak; all the muscles of the limbs were in a complete state of relaxation. The following day a contraction was produced which invaded successively the legs, the arms, the neck, the muscles of the face, and the eyes; the respiratory muscles remained unaffected. The following days the muscular rigidity disappeared little by little. At the end of two months, movements of the arms and legs were possible. After a year, the patient was able to use his right leg. Movements of the right arm returned partially at the end of two years. There exists at present incomplete paralysis of the right arm; the hand is œdematous. We must suppose, from these phenomena and the position of the cicatrix, which is still visible, that there has been a lesion of the upper part of the medulla, at the level of the left pyramid, and above its crossing, as the persistent paralysis of the right arm indicates.—*London Med. Record*, Feb. 15, 1877.

Glossoplegia from Lesion of the Pons Varolii.

In a recent number of the *Progrès Médical* we find a discussion between M. HALLOPEAN and M. JOFFROY on the question—whether it is possible for the tongue to be paralyzed from a lesion of the pons Varolii, the rest of the brain being healthy? M. Hallopean stated that he wished to say a few words upon the question which had lately been introduced by M. Joffroy: If lesion of the pons Varolii could produce complete paralysis of the tongue comparable to those produced by lesions of the bulb where the hypoglossal nerves or their centres of origin are involved? M. Hallopean thought that he could clearly demonstrate it, by the fact that all the nervous conductors by which the bulbar centres are brought into relation with other volitional centres necessarily traverse the pons. He quoted a case of M. Guéniot, which was published in the *Bulletin* of the Society in 1860, of which the following is a summary.

X. was struck suddenly with paralysis of the left side (not apoplectic) and complete loss of speech. From this time until her death, four days later, it was impossible for her to articulate a word, although the intellect was clear and she wrote correctly. The movements of the tongue were performed with difficulty, and only to a slight extent. At the *post-mortem* examination, there was found in the pons Varolii a clot of blood of the size of an almond, which did not reach its inferior limits, and the rest of the brain was quite healthy. He thought this case demonstrated that a lesion of the pons Varolii can give rise (like a bulbar lesion) to a glossoplegia complete enough to absolutely destroy the power of articulation. A case of this nature would be extremely difficult to diagnose. The lesion could only be localized in the bulb, provided it ultimately produced an atrophy of the tongue, indicating that the hypoglossal nerve at its origin was directly involved (and not by its relationship with other parts of the brain). M. Joffroy remarked that M. Hallopean quoted only one case in support of his opinion. He further stated that M. Hallopean affirmed that no case existed where lesions of the pons Varolii had produced an absolute paralysis of the tongue; for in the case of M. Guéniot the tongue was not absolutely paralyzed. In fact, it was not stated in M. Guéniot's case whether there existed or not any lesion of the bulb, but it was said that in the right half of the pons Varolii there existed a clot of blood of considerable size, and also a smaller one in the left half, without facial paralysis. Alternate paralysis, which is the rule under such conditions, may have existed here, and have been incomplete on both sides, and therefore may have escaped observation. An error of this kind would explain the fact, and would lead us to expect that other errors might have existed. Again, M. Guéniot's case, should it be true, would not bring a single element to the present discussion; for it dates back as far as 1860, a period at which the nature of bulbar paralysis was little known.

M. Hallopean said that he did not think M. Guéniot's case merited such severe criticism. It had been investigated by Marcé with the greatest care, and it could not be admitted that the bulb was not examined, for it is specified that the hemorrhagic infarct was entirely confined to the substance of the protuberance, and that the other parts of the brain were healthy. It should be considered again that there was no apopletic seizure; that it was evidently provoked by hemorrhage into the protuberance, and that we could not truthfully assign to any other cause the paralysis of the tongue, which was produced at the same time as paralysis of the limb.—*London Med. Record*, Feb. 15, 1877.

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Paralysis of the Ulnar Nerve.

M. PANAS, of the Lariboisière Hospital, and a candidate for the vacant place in the Section for Surgery in the Academy of Medicine, read a paper before that body (*Gaz. des Hôp.*, Feb. 15) "On a Little-known Cause of Paralysis of the Ulnar Nerve." He believes that the observations which he brings forward which refer to compression of the ulnar nerve are entirely new, and they relate

to an important subject in pathological anatomy—viz., paralytic neuritis of local origin. He furnishes a brief summary of the four cases that have occurred in his practice:—

1. A man, aged nineteen, entered the hospital on account of a progressive paralysis of the ulnar nerve, owing to compression and a changed condition of its nutrition induced by a sesamoid bone, the size of a kidney-bean, developed within the substance of the internal lateral ligament of the elbow-joint. The bone, by increasing in size, had rendered the portion of the ulnar nerve in its vicinity large, indurated, and painful, and had thus induced paralysis of the muscles situated below. On the sesamoid—which was mistaken for an exostosis, so intimate did it seem—being removed, suppuration of the joint and death ensued. At the autopsy there was found a neuromatous swelling of the nerve at this point, there being present a chronic neuritis, characterized by proliferation of the conjunctive tissue, with hyperæmia, the strongly compressed nervous tubules having undergone a notable diminution in size. 2. The lesion of the nerve was the same as in the preceding case, but the cause of the paralysis was referable to a fracture of the elbow dating back twelve years. Consequent upon the formation of a large callus, the groove between the trochlea and olecranon became filled up, placing the nerve in a more superficial position, so that it was exposed to the action of external violence. A hyperplasic neuritis was established, the nerve becoming knotty at this point, and a slowly increasing but progressive paralysis ensued. In this man, forty years of age, and of robust constitution, the paralysis and muscular atrophy had reached a very high degree; but, in spite of this, electrization effected a complete cure of the paralysis. 3. This was also a case of progressive and very considerable paralysis of the ulnar, consequent on a chronic neuritis, the trunk of the nerve feeling knotty below the elbow. The cause of these accidents was compression, with violent friction of the nerve continued for some hours while the man was rowing a boat caught in a tempest. The paralysis commenced a month afterwards, and when the patient was seen it had lasted two years, the limb appearing fleshless. Six months of electrization and cold douches restored the use of the limb. 4. This was an example of incomplete paralysis produced by an increase of the volume of the trochlea and the filling up of the groove which the nerve traverses. The cause of this deformity was dry arthritis of the elbow-joint.

As the general result of these observations, it is seen that the ulnar nerve under the influence of various causes is placed in a too superficial position, and thus exposed to external injuries. It thus becomes the subject of chronic inflammation resembling neuroma, and paralysis of all the muscles of the forearm and hand may be the result. Electricity is the means *par excellence* by which this form of paralytic neuritis should be treated; and, under its influence, not only will the paralyzed muscles return to their normal condition, but the swelling and induration of the nerve may also diminish. When a cure has been thus effected, we should endeavour to prevent a return of the affection by protecting the too superficial nerve by a metallic shield.—*Med. Times and Gaz.*, Feb. 24, 1877.

Betz on the Use of Ice in Croup.

Dr. F. Betz (*Memorabilien*, 10 Sept. 1876) recommends in cases of croup the application to the front of the neck of a bottle or bladder filled with finely powdered ice, and fastened by a light bandage. When the temperature is high, salt is added. The bottle must not be allowed to remain until the ice is completely melted, but be renewed before this occurs. By this treatment, the temperature of the anterior part of the larynx and trachea is lowered, so that the process of exudation is arrested. At the same time, heat is abstracted from the air passing to the lungs through the larynx and trachea; and this acts favourably on the lungs. The ice-treatment of croup is to be regarded as the most rational preventive and abortive plan, if its application be sufficiently early, energetic, and continued. If it be too late to subdue the formation of the false membrane, ice is of very great value during operation and in the after-treatment. The intense cold causes contraction and emptying of the

vessels of the neck: so that hemorrhage gives less trouble during the operation, and the larger veins and the front of the neck are less contracted. In the after-treatment, the use of ice diminished the tendency of the operation-wound to become diphtheritic; it also expedites healing, and keeps down swelling of the wound. After operation, pieces of gauze soaked in ice-water or laid upon pieces of ice are placed over the canula and wound, and renewed every five or ten minutes. In this way, the inspired air is cooled.

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On Pertussis.

At one of the meetings of the Académie de Médecine last month (*Union Médicale*, January 11), Dr. GUÉNEAU DE MUSSY exhibited some specimens procured from two children who had died from pertussis. In these there was present considerable tumefaction of the tracheo-bronchial glands, which compressed the pneumogastric and its laryngeal branches. He reminded the Academy that in his theory of pertussis he referred the symptoms of the disease to bronchial adenopathy; and in examples of such glandular enlargement, when due to any other cause, there may always be observed a cough resembling that of pertussis. By this theory we explain (1) why the spasmodic cough does not set in until the second or third week of the affection, after the period termed catarrhal, and which Dr. Guéneau de Mussy terms "*exanthematic*;" (2) why the characteristic cough may persist for months, and sometimes even for years; (3) why, when the glandular swellings are only incompletely dispersed, and having great tendency to be reproduced, there may, under the influence of a cold, chills, measles, etc., be induced a return of the whooping-cough in children who are convalescent; (4) that a prolongation of the compression of the inferior laryngeal nerve may give rise to a disorganization of its texture and abolition of its function; (5) that in whooping-cough, when the adenitis is but slightly developed, or does not affect the glands, which are in direct connection with the pneumogastric or its laryngeal branches, the spasmodic cough may be absent, even when there is every reason to believe that pertussis is present.

Dr. Guéneau de Mussy added that, in his opinion, the adenopathy in pertussis is symptomatic of an internal eruption, the pertussis being a kind of eruptive fever, with exanthematic, or rather enanthematic, manifestations on the bronchial mucous membrane. Prof. Hardy objected that if these glandular swellings were the cause of the pertussis we ought to meet with them in all cases; whereas in autopsies after this disease their existence is exceptional. Moreover, if this theory were correct, we should not meet with those instances of rapid cure from simple change of air or locality. A cure may thus take place in five or six days—a period too short for the disappearance of glandular enlargements. Prof. Hardy has also seen paroxysms of the cough disappear almost instantly under the influence of baths of compressed air, which could hardly be supposed to act thus promptly on glandular enlargements. Dr. Guéneau de Mussy observed that the glandular enlargements have not been observed in pertussis simply because they have not been sought for. During an epidemic of pertussis he found them in every autopsy. As to the prompt effect of change of air, it is not necessary that the enlargement should be entirely dispersed, it sufficing that it should be notably diminished, for the convulsive paroxysm to diminish or even cease. M. Blot declared that he could not comprehend how a permanent lesion like enlarged glands only produced intermittent phenomena, as in the paroxysms of pertussis. In symptomatic neuralgias (as, *e. g.*, that produced by a carious tooth), the pain is, indeed, observed to manifest itself in an intermittent manner, but still it exists, and may always become aroused under the influence of the slightest causes, as a change from heat to cold, the contact of food, etc. Besides the caries, there is then also a something else; and where is this "something else" in pertussis? Dr. Guéneau de Mussy replied that intermission is in pathology the general rule, even in the most manifest and most permanent organic alterations; so that the coexistence of the glandular affection with intermittent paroxysms

of cough in pertussis is in nowise opposed to the laws of pathology. As to the nature of the intimate modification, under the influence of which the convulsive phenomena of the disease are produced, he declares himself completely ignorant. There is evidently a special morbid influence which modifies the innervation and deranges it sometimes for one, two, or even three years, which seems to militate in favour of the existence of an organic cause of long duration, such as adenopathy. Dr. Woillez wished to know how, under this theory, the contagion of pertussis could be explained; and Dr. Guéneau de Mussy replied that while he admitted the contagion of the disease, he did not profess to explain it, any more than it can be explained in other contagious diseases. He repeated that, in his opinion, pertussis is a kind of eruptive fever, contagious like all the other maladies of the same genus.

In connection with the above communication we may notice another paper read before the Academy (*Bulletin de l'Acad.*, February 6) by Dr. Delthil, on "Diphtheroid Ulceration in Pertussis," in which, from the observation of twenty-seven cases, he comes to the following conclusions: 1. This ulceration is the primary phenomena of a general affection, as chancre is in syphilis. 2. It has been improperly termed sub-lingual, as its seat is variable—sometimes at the frænum, on the right or left side, the floor of the mouth, lower lip, etc. 3. It has been attributed to the irritation produced by the projection of the teeth during the paroxysms of cough; but in two of the cases it was observed prior to dentition. It always disappears before the paroxysms, and is found at all ages, in children and in adults. 4. It precedes the paroxysms of cough, appearing with the fever and vomiting, and disappears with the fever in from four to eight, or sixteen days, the vomiting and paroxysms still persisting. 5. It is observed from the twelfth to the fifteenth day after the supposed contagion. 6. It leaves the cicatrices behind. 7. Of more frequent occurrence than has hitherto been acknowledged, it seems to be proportionate in its extent, duration, and depth to the gravity of the affection. —*Med. Times and Gaz.*, Feb. 17, 1877.

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Acute Pneumonia in Children.

Dr. JULIUS STEINITZ, of Breslau, writes as follows on this subject in the *Allgemeine Medicinische Central-Zeitung* (Nos. 95 and 96, 1876).

While pneumonia in childhood frequently comes under our notice, it is rarely that we can be contented with the simple diagnosis of the disease. To seek for the causes is of the highest importance, and we know from experience that in a large number of cases pneumonia is manifested only as the result of some other pathological condition. It is then absolutely necessary, in cases of inflammation of the lung, to make, not the disease, but the patient the object of treatment.

The careful observation of eighty-three cases of pneumonia in children from six months to ten years of age, which have been under my care during about a year and a half, has convinced me that inflammation of the lungs in children has so much that is special in its etiological, predisposing, and diagnostic conditions, that one is justified in again taking a review of this often-described disease, even at the risk of adducing nothing new. The pneumonia of children is divided into that of the newly born and that of older children. (Congenital pneumonia is very rare). It occurs in the most various climates, and in the most populous localities. The most influential cause in its production is cold—especially cold draughts of air—principally north and northeast winds, as well as sudden changes between cold winds and warm currents. It is least frequent in the summer months, while in autumn, especially in November and December, cases of inflammation of the lungs are more frequent; and it reaches its maximum of frequency in the spring months—April and May. In Breslau it appears only sporadically during the summer months and in October; but if a strong northeast wind prevail, as was the case in October, 1866, it occurs with terrible frequency. I will here remark that the maximum of cases of inflammation of the lungs does not coincide with that of infantile pneumonia—the former is most prevalent in January, the latter in May.

The statements as to the frequency of pneumonia during the period of suckling vary. According to some statistics it is very frequent, according to others less so. But during the second and fifth years it attains a high degree of frequency, and it extends over the whole period of childhood. In the suckling child it arises partly in the simple form, partly as a result of bronchitis, and also in the course of malignant diseases, such as aphthæ and induration of the cellular tissue. In later years it is generally simple.

Pneumonia occurs much more frequently among the children of the poor than of the well to-do classes. Strong children are far more readily attacked by the pure diffuse form of the disease than weaker children. An earlier attack of pneumonia predisposes to a second. The secondary form appears in the course of severe illness of any kind. There is no certain evidence of a special predisposition to the disease in either sex in children. In my 83 cases the following were the numbers:—

Age.	M.	F.	Total.	Deaths.
Six months to 1 year	4	4	8	3
1 to 2 years	16	0	16	7
2 to 5 years	8	20	28	10
5 to 7 years	16	10	26	2
7 to 10 years	15	7	22	2

I know quite well that this table can make no great pretension to value, for the statistics of pneumonia must be based on a much larger number of cases. It may, however, serve as an excuse for the expression of some clinical facts.

In proceeding to examine the predisposing causes, we must take into account, along with the constitutions of the children, their nutrition, and the history of previous illnesses. Of the 28 children from two to five years old, 19 were the children of poor parents. These 19 were mostly of good constitution, but had more severe illnesses than others who were weaker and in higher social condition. In the 10 who died, I was able to ascertain that a previous attack of intestinal or bronchial catarrh, partially improper feeding, imperfect ventilation, and crowded dwelling, favoured the predisposition, and were chargeable with rapid collapse. It is an established fact that the dentition in early childhood is very frequently accompanied by pneumonia. A very powerful predisposing cause is a previous attack of pneumonia; as is also descent from unhealthy parents. In these children the organism is not only the receptacle, but the breeding place of the disease. A long period of latency not unfrequently renders an investigation of the causes difficult; in small children, pneumonia may occur in a form which points far more distinctly to an acute affection of the brain or abdomen than to one of the lungs.

To sum up—

1. Pneumonia attacks children of all ages more or less, and almost without distinction of sex.

2. The disease occurs frequently at certain times of the year; its greatest prevalence is in November, December, April, and May.

3. The maximum number of cases of pneumonia in children is in May; in the general population, in January.

4. The predisposing causes are: *a*, dentition; *b*, constitution, and improper feeding; *c*, previous illnesses; *d*, previous attacks of pneumonia; *e*, unhealthy parentage.

5. The occurrence of pneumonia is also produced by agencies as yet unknown, not to speak of injuries and like circumstances.

To so-called "catching cold" as a predisposing cause, only an unimportant part can be assigned, since very few children suffer from pneumonia, although exposed to the external air. This view has led to the practice, especially among those in better condition, of entirely withdrawing children from the open air during winter. The mischief of this first becomes manifest to the parents when the child, attacked with pneumonia in spite of the precaution, is unable to resist the disease.

These are the cardinal points in the etiology; if we give sufficient attention to them, we shall perhaps be able to prevent the very great prevalence of pneumonia in children.

As regards prognosis, I may say that it is better *quoad vitam quoad valetudinem integram;* that is, more children remain alive after inflammation of the lungs than in the possession of perfect health. This is indeed a cloudy prospect; but practice everywhere confirms the statement. My cases give evidence in proof of it, and I could adduce other facts in its support from the history of earlier cases.

Of the 52 children discharged, I have already found that 18 are affected with chronic pneumonia. Many of them that remained I had not had an opportunity of examining since they recovered from the pneumonia. Of the 59, 10 had a second attack of pneumonia within a year, an occurrence which unfortunately is not rare.

Among my patients, there were 9 cases of double pneumonia. It is indeed asserted that this occurs more frequently in children than in adults. Right-sided pneumonia occurred in 26 cases; and I can testify that, *cæteris paribus*, it is somewhat more severe than left-sided pneumonia. The prognosis in secondary inflammation is always bad.

Regarding the pathological appearances, I will only say that they differ from those of the pneumonia of adults, in that the pneumonia is not in general lobar but lobular—occupying limited portions of the lung, between which healthy tissue is found. Lobar pneumonia is rare.

I turn now to the commencement of the disease. It is often suddenly ushered in by a bronchial catarrh, or without this. In older children, the initial stage begins with a rigor, or with paleness and trembling, or even with paroxysms of convulsions. The respiration is frequent, the inspiration interrupted, the expiration groaning. The temperature is 102° to 104° Fahr., with slight remissions. The pulse is generally large and frequent. The physical diagnosis is attended with great difficulty on account of the crying of the child. The sputa are wanting; and in their absence one sees how necessary they are for an exact diagnosis. The peculiar character of the respiration, however, makes the diagnosis more certain. The respirations are 60 to 80 in a minute, and the accent fully on the expiration, not, as otherwise, on the inspiration. Very active contractions of the diaphragm are evident. In more severe phases of the disease the facial muscles participate, and the alæ nasi are worked. The quick, short, and superficial breathing is an important sign; as is also the reddened and partially cyanosed face.

Percussion, of course, gives a negative result in the lobular form of the disease, but reveals dulness in the lobar form. We must not allow ourselves to be deceived when, in a crying child, the respiratory tension, affecting the chest-wall, reveals dulness, which disappears with the commencement of inspiration. When dulness remains during both inspiration and expiration, pneumonia is truly present. According to Niemeyer, the resistance should also be tested. Percussion should not be done too violently, nor at only a few points.

Auscultation in children is performed either directly with the ear, or by means of Voltolini's stethoscope, with which the movements of the child can be most easily followed.

I saw severe cerebral symptoms in five cases, with disease of the upper lobes. The typical course of pneumonia is similar in children and in adults. The principal causes of death are: 1, febrile exhaustion; 2, severe bronchial catarrh on the unaffected side; 3, extensive hepatization; 4, complications, of which intestinal catarrh is the most dangerous in children. They have very short breath, are unable to suck, and are frequently attacked with convulsions. It is not easy to confound the disease with atelectasis, as this disorder is unattended with fever. The vocal resonance affords the means of diagnosis from pleurisy.

With regard to treatment, I will bring no remedy prominently forward, but describe the method which I have followed. I have followed Jürgensen's advice in the treatment of pneumonic children, and have no reason to regret having done so. During the height of the fever, as is generally the case, the work of the heart is increased. We must, therefore, before all other things, put the heart in a condition which will enable it to perform its work. According to Jürgensen, prevention of failure of the heart's action takes the first

place in the treatment of pneumonia; he asserts that death in this disease is the result of insufficient cardiac action. After this the fever is the first object of therapeutic action; with the abatement of the fever, the strength of the patient is also generally reduced. The thermometer does not aid us much in these cases, but the pulse is more to be depended on. The first requirement is coolness and fresh air. Cold baths can only be used to reduce the temperature, if stimulating measures be employed before and afterwards. It must be remembered that the organism cools sooner in children than in adults. The pulse must necessarily be the guide in the adoption of these measures. The most valuable remedy in pneumonia is quinine: it quickly reduces the temperature without weakening the heart. Digitalis rapidly weakens, and is only to be given with caution. Leeches must be avoided as far as possible. I have not used them in any of my cases. Quinine is given to children under five years in doses of 1½ grains for each year of life; to older children, in somewhat larger doses.

As regards the diet, the children may be allowed the mother's breast as milk; in older children, broth may be added to the milk. I give to children affected with pneumonia, in quantities proportioned to the age, Bordeaux wine, generally with soda-water; the temperature falls rather than increases under the use of alcohol.

The sleeplessness of pneumonic children is best obviated by antipyretic means (cold wrappers, quinine), and only when constipation is present, should the use of quinine be interrupted by some doses of calomel.

When the dyspnœa becomes severe, an emetic is indicated; if symptoms of collapse appear, wine is the best remedy, and, in more severe stages of collapse, musk, which acts more quickly than camphor. During the stage of convalescence, mild preparations of iron should be given.—*London Med. Record*, Feb. 15, 1877.

Cheyne-Stokes Respiration.

M. C. Biot, *interne* of the Hospital at Lyons (*Gazette Médicale de Lyon*, December 16 and 30), thus describes the respiration of Cheyne-Stokes as observed towards the close of certain diseases. At a given moment the patient ceases completely to breathe for a variable time—generally for from ten to fifteen seconds at least; then commences respiratory movements, at first small and superficial, deepening little by little until they become extreme and dyspnœic; then again gradually diminishing in amplitude to complete arrest, when the cycle of phenomena again commences.

M. Biot relates a case in which the Cheyne-Stokes respiration was well marked, and was carefully observed by him for several weeks. The patient, a pale, thin man, aged 57, was admitted into the Hôtel-Dieu on September 30th, 1876. On first approaching his bedside, M. Biot was struck with his state of extreme oppression, amounting to orthopnœa; but a few seconds had scarcely elapsed when the orthopnœa almost suddenly disappeared, and the patient became drowsy. On arousing him to ask him about his illness, a new period of dyspnœa commenced. The Cheyne-Stokes type of respiration was at once recognized, and the following further particulars were noted: The period of apnœa had an average duration of 17 or 18 seconds, the period of dyspnœa 42 or 43 seconds, the number of respirations during the latter period of dyspnœa was 28, the arrest of breathing always occurring in expiration. The pause, marked by a horizontal line in the pneumographic tracing, corresponded to the upper third of the entire respiratory wave, *i. e.*, at the moment of pause the expiratory recoil of the thorax was incomplete, there being still a notable quantity of air in the chest.

During the period of apnœa the patient was disposed to sleep, his face became slightly cyanotic, and these phenomena disappeared during the respiratory period. The recurring periods of dyspnœa, indeed, caused a sleeplessness that was bitterly complained of. This patient had had no previous diseases, neither rheumatism, cerebral hemorrhage, nor syphilis. His illness dated back only fifteen days (a characteristic feature of the disease). There

was no cephalalgia nor swelling about the neck to suggest compression of the pneumogastrics. Some enlargement of the heart was detected, and *double aortic murmur* with *slight mitral inadequacy* was noted. The pulse had the aortic regurgitant character, and the double bruit of Durosiez was well marked in the femoral arteries. Cardiac pulsations, 86 in the minute, reached the radials without undue delay, although the vessels were atheromatous. There was slight pulsation of the jugulars.

Sphygmographic observations were in agreement with the above particulars, but showed an unexpected difference between traces taken during the periods of apnœa and of dyspnœa. During the periods of apnœa, lasting 18 seconds, 36 pulsations were noted; whilst during the period of dyspnœa, lasting 49 seconds, there were only 82. The cardiac beats are thus, M. Biot observes, evidently accelerated during the periods of apnœa. On taking (Oct. 6) comparative pneumographic and sphygmographic observations at the same moment, M. Biot found that during apnœa the angles of the pulse-tracings were more marked than during dyspnœa. This fact, taken with increased rapidity of pulse during apnœa, showed lessened arterial tension during these periods, an observation opposed to the statements of Filehne. Some days later (Oct. 14) there were some obscurity of ideas, and impairment of sight. The pupils were, during apnœa, contracted; during dyspnœa, dilated. The following day, severe and general conjunctivitis set in. On Oct. 17th, there were commencing œdema of the face, and slight delirium during the day, more decided at night. On Oct. 18th, the duration of apnœa was 18 seconds, cardiac beats 35; duration of dyspnœa 55 seconds, cardiac beats 93. The cardiac pulsations were observed to begin to quicken at that moment of the respiratory period at which the inspirations became superficial, increasing in frequency during the apnœa, and again to become slower with the first appearance of the respiratory movements (not only after the first respirations, as Bernheim had observed). M. Biot took many tracings to fully convince himself on this point. The patient died on Oct. 28th, but no *post-mortem* inspection could be obtained. In the treatment of the case, 15 grains of chloral, given three times in the latter half of the day, gave much relief and some quiet, refreshing sleep.

After reviewing the opinions of several authors, and more particularly of Traube and Filehne, respecting the explanation of this peculiar disorder of the respiratory functions, M. Biot criticizes the views of Filehne; contrasting his own observations with those recorded by the latter author. Without venturing upon any hypothesis of his own at present, he appears rather to favour that of Traube, who so far agrees with Filehne and most others in assuming the necessity in these cases of a diminution in the excitability of the respiratory centres, whether from defective arterial irrigation of the medulla, or other cause. In consequence of this impaired sensibility of the respiratory centre, Traube affirms that carbonic acid tends to accumulate in the blood, firstly in the pulmonary circulation, exciting but superficial respiratory movements, which are insufficient to prevent further accumulations in the blood generally. With increasing excess of carbonic acid, however, all the peripheral nerves finally become excited; and, this excitation being transmitted, in addition to that of the pulmonary nerves, to the medulla, the respiratory movements become excessive and *dyspnœic*. The blood now rapidly gathers oxygen, and carbonic acid diminishes so far as to cease to excite the radicles of the pneumogastrics at all (the respiratory centres being also exhausted by prolonged excitation), and the period of *apnœa* commences. Filehne, according to M. Biot, maintains that the first effect of the accumulating carbonic acid in these cases is to excite the vaso-motor system rather than the respiratory centre, causing contractions of the small arteries and anæmia of the nervous centres. Bearing upon the probability of this hypothesis, however, M. Biot's observations upon the single case under consideration are directly opposed to those of Filehne in several points, viz.: the acceleration of pulse and diminished arterial tension during the apnœa stage, the contraction of the pupils observed during the same period, and their subsequent dilatations which are not the phenomena of excitement of the vaso motor centres. M. Biot thinks, too, that the advantageous effect of chloral in his case, in lessening the durations of the apnœa

from 17 or 18 to 10 or 12 seconds, tends to show that recovery of respiration was not due to excitation of the vaso-motor centres; inasmuch as, if so, it should have been retarded rather than otherwise by chloral, which diminishes the excitability of the nervous centres.—*London Med. Record*, Feb. 15, 1877.

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Nervous Phenomena in Cases of Intestinal Strangulation.

M. BERGER (*Bulletin Général de Thér.*, October 30, and *Dublin Medical Journal*) has collected sixteen cases, which he divides into three groups: Cramps, contractions, and convulsions. A fourth species may also be admitted —viz., syncope, of which one instance has been noted. Cramps are most frequently observed. They are especially common in the calf, sometimes in the arms, and all down the leg; in very severe cases they engage the wrists and fingers. The pains are so violent that they may mask those due to the strangulation. The variety of the strangulation, crural or inguinal hernia, internal strangulation, etc., has no influence upon these nervous phenomena. They may be complicated with severe pulmonary lesions, of which M. Berger has collected two examples. These nervous accidents resemble those described by Trousseau in cholera and dysentery, and they are always preceded or accompanied by a serious general condition of the system, to which Malgaigne has given the name of hernial cholera. M. Berger, a report of whose essay on the subject was presented to the Société de Chirurgie by M. T. Anger, concludes that the existence of these nervous symptoms indicates a very tight constriction which requires immediate liberation.—*London Med. Record*, Feb. 15, 1877.

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Disturbances of the Hepatic Circulation.

COHNHEIM and LITTEN, in a paper in Virchow's *Archiv*, Band lxvii. (abstract in *Centralblatt für die Medicin. Wissenschaften*, No. 42, 1876) propose to answer the question, Which of the vessels of the liver is it whose obliteration brings about the atrophy of parts of the organ observed in cirrhosis? By injecting non-poisonous aniline blue into the circulation after ligature of the hepatic arteries and their anastomosing branches (superior mesenteric and left coronaria ventriculi), the whole capillary region of the lobules of the liver was coloured blue; the interlobular arteries alone remained free. The same occurred when the hepatic arteries, in place of being injected, were rendered impervious by injection of chromate of lead. On the other hand, when the portal vein was tied and the hepatic arteries were left free before the injection, the capillary network surrounding the bile-ducts and the branches of the interlobular veins became coloured; and here and there the peripheral organs of the capillary system of the lobules. The filling of the central veins, which occurred at the same time in some points, was due to regurgitation from the vena cava, which occurred when both the hepatic artery and the portal vein were tied. Hence the hepatic artery supplies the vessels of Glisson's capsule, the bile-ducts, and the vasa vasorum of the portal vein; its capillaries pour their blood into the interlobular portal twigs. There is no direct passage of the hepatic artery into the intralobular veins, or only in a very irregular manner.

This view of the circulation explains how it is that thrombosis of the portal vein has no essential influence on the tissue of the liver, as the artery still furnishes to the capillary region of the portal vein a sufficient quantity of blood for the formation of bile. Experiments in which globules of wax were injected from the mesenteric vein into the branches of the portal vein in dogs had not produced, at the end of a fortnight, any remarkable changes in the structure of the liver. The case was different when the hepatic artery was obstructed. The results of earlier experimenters, who found no disturbance of the functions of the organ after ligature of the hepatic artery, were invalidated by the proof of the impossibility of cutting off all the anastomoses of the vessel in dogs and cats. In rabbits, however, this could be effected by applying the ligature behind the organ of the right coronary artery of the sto-

mach. The portions cut off from the arterial supply rapidly become gangrenous.

The conclusion arrived at is that, in cirrhosis of the liver, the contracting connective tissue compresses the branches of the hepatic vein (artery), and that the partial atrophy is produced by the obstruction of this vessel.—*London Med. Record*, Feb. 15, 1877.

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On the Treatment of Tabes Mesenterica.

Dr. LUBERT, of Héricourt (Haute-Saone), reports (*Gazette Médicale de Strasburg*, 1 Dec. 1876) a simple, easy, and efficacious mode of treatment of tabes mesenterica. The author is indebted to his father for it, and the latter got it from a medical man in the Austrian army in 1814; it has been tested for upwards of sixty years with undeniable success.

The formula is as follows: Tincture of rhubarb, 30 parts; liquor potassæ acetatis, 8 parts; antimonial wine, 4 parts.

The mixture is given to the patient in drops with a teaspoonful of sugared water three times a day, morning, noon, and night, the number of drops being regulated by the age of the infant; 10 drops is a minimum, 20 drops a maximum dose; and no accessory treatment.

There is no case in which it is contra-indicated, except where there is well-marked fever and considerable diarrhœa. Commencing rickets and enlargement of the joints need not prevent its employment.

The treatment should be continued, but in gradually decreasing doses, two or three weeks after the recovery of the patient.—*London Med. Record*, Feb. 15, 1877.

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On the Harmlessness of Prolonged Contact of Atmospheric Air with the Healthy Peritoneum.

Dr. LÉON FRÉDERICQ contributes a paper, giving the results of experiments in support of the above proposition, in the *Annales et Bulletin de la Société de Médicine de Gand*, for November, 1876. The author reviews the generally received opinions of surgeons on the danger of admitting air into serous and synovial cavities, and states that the object of his investigation had been to discover wherein the hurtful qualities lay, whether in the component gases, in the physical conditions, or in the dust organic and inorganic; for it had been advanced by Cohnheim that the frog's peritoneum regularly inflamed in a few hours when exposed to unfiltered air; and Zahn had produced inflammation and suppuration by sowing the surface of the peritoneum with the "microsporon septicum" of Klebs, while nothing occurred with air previously deprived of its floating particles.

Dr. Frédericq was arrested on the very threshold of his investigation by the fact that, in his experiments, the unfiltered air of a physiological laboratory might be passed with impunity into the abdominal cavities of guinea-pigs and rabbits, though the stream of air was in some cases continued for eleven hours. Superficial, as well as microscopic, examination by the silver method, showed no sign of pathological change.

The author publishes this negative result in confirmation of the recently expressed views of G. Wegner, *Chirurgische Bemerkungen über die Peritonealhöhle* (*Archiv für Klin. Chirurgie*. 1876. Bd. xx.). In the only experiment which is given in detail, 28.5 litres of unfiltered air, at a temperature of 14° Cent. (57.2 Fahr.), under varying pressure, were passed through the abdominal cavity of a rabbit at a rate of 2.5 litres per hour. The animal was killed and examined on the third day after the operation.—*London Med. Record*, Feb. 15, 1877.

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Slowly advancing Sclerema, attended by Cardiac and Gastric Disorders.

Dr. JOHN HARLEY, at a recent meeting of the Royal Medical and Chirurgical Society (*Med. Times and Gaz.*, Feb. 10, 1877), read notes of a case as above.

The patient has been under the author's observation for nearly five years. He is a man of fair complexion, and of rather feeble constitution; he is in his fiftieth year, and a stone-mason by trade. He was obliged to give up work in February, 1872, and applied to the author a month later. Then he was unable to close the hands, on account of induration of the subcutaneous tissue. The fingers were of normal size, hard like wood, dusky, very cold, and moist. The induration was marked around the wrists so as to reduce the movements of the joints to a minimum, and render them painful. The rotatory movements of the forearms were reduced to one-half. The induration gradually subsided at a little distance below the elbow. The temperature of the fingers was usually from 3° to 5° only above that of the external air. Touch was but very slightly, if at all, diminished. From the first there had been a tendency to gangrene at the extreme tips of the fingers. During the progress of the case the face gradually lost power of expression, the mobility of the skin (especially over the malar bones and forehead) decreased, and the subcutaneous tissue became firmer. The affection spread over the neck and upper part of the chest, and the aponeurosis of the external oblique became hard and unyielding. The characteristic features of the disease are best displayed on the neck. The skin in front forms a thin, hard, rigid plane, gathered into vertical ridges feeling like knotted cords, and complete extension of the head is prevented. The skin is drawn very tightly over the upper part of the chest. The sides and back of the neck are mottled red and white, with what may be regarded as interrupted lineæ atrophicæ, forming regularly arranged areolæ, measuring from one-half to three lines in width. The pink areolæ exhibit to the naked eye ramifications of minute bloodvessels, such as are seen in this locality in persons much exposed to the weather; the extremities of these vessels terminate abruptly in the margins of the colourless areolæ. These latter are of ivory-like whiteness and opacity, and usually are absolutely bloodless. The skin of the affected parts retains, as far as can be ascertained, its normal degree of sensitiveness. Apart from wasting of the muscles from want of use, and excepting the cutaneous muscles, the muscular system is free from disease. The course of the disease has been marked by increasing debility, and the patient has for the last two years experienced attacks of pain in the cardiac and epigastric regions, attended with flatulency, and ending in retching and vomiting of sour or bitter fluid. The pulse began to intermit, and at times the intermission was so regular, that with a regular radial pulse of forty to forty-two there were just double the number of cardiac systoles, every other one being too feeble to reach the wrist, and occasionally the secondary beats disappeared from the heart, which then beat in unison with the pulse forty to forty-two times a minute. Some days the pulse is regular, other days it is very irregular. Associated with the stomach derangement, he is liable to attacks of palpitation, and sometimes of extreme faintness. The patient is at present weakly, ill-nourished, and semi-anæmic. After slight exertion he "feels faint, as if he had no breath at all," and slight prolapse of the mucous membrane of the bowel, with a little mucous discharge, comes on. He is liable to profuse perspiration. The lungs and kidneys are normal. With regard to the pathology of the case, the author, drawing attention to the condition of the skin of the neck, and to cases in which the subcutaneous tissue of the palm becomes slowly adherent as a depressed, hard, tucked-in cicatrix (a condition which exists in the patient himself), concludes that the sclerema is merely the direct result of atrophy, *pari passu*, of the bloodvessels, and of the lacunæ and canaliculi of the connective tissue, converting thereby the soft, moist, open, and well-nourished network into a hard, comparatively dry, close, and ill-nourished tendinous tissue. The atrophy he believes to be due to depression of sympathetic (vaso-motor) nerve power, that the functional disturbance of the heart and stomach is due to the same cause—in a word that the case above described is one of slowly advancing paralysis of the sympathetic system of nerves generally, and that the affection is manifested at the periphery by the atrophy of the connective tissue, and nearer the centre by the grave disturbances of the circulatory and digestive functions.

Neuroses of the Skin.

KAPOSI, in the *Archiv für Dermatologie und Syphilis*, 1876, 3 Heft., publishes an extract on neurotic affections of the skin, from the forthcoming and last volume of Hebra's work on skin-diseases. He states that the affection described by Duhring, of Philadelphia, as *pruritus hiemialis*, is also observed in Vienna. He considers it as associated with the dry and harsh state of the skin which is produced by the cold, and that it may be placed in the same category with the itching and subsequent eczema connected with varicose veins, excessive sweating, mechanical pressure, scratching, water, soap, etc.—*London Med. Record*, Feb. 15, 1877.

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Febrile Urticaria after Leeches.

LÉOPOLD (*Révue des Sciences Médicales*, Oct. 1875, cited in the *Archiv für Dermat. und Syphilis*) describes a case in which eight leeches were applied to the pubic region of a hysterical woman, and she forthwith suffered from general urticaria with fever. The author recalls a case of Scanzoni's, in which the application of leeches to the cervix uteri was followed by urticaria, and considers the process as being due to a stimulus applied to the vascular system through irritation of a nerve-plexus.

Another case is cited as reported by De Ranse (*Gaz. Méd.*, 1875, No. 38), in which a man swallowed a wasp in a glass of beer, and immediately afterwards felt that he was stung in the œsophagus, on the right side below the thyroid. An eruption of urticaria took place first on the neck, and then on the rest of the body.—*London Med. Record*, Feb. 15, 1877.

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Etiology of Psoriasis Vulgaris.

DR. EDGAR WUTZDORFF (*Vierteljahresschrift für Dermatologie und Syphilis*, 1876, 3 Heft.) believes that, whilst the disposition to psoriasis is hereditary, the parts of the body on which it develops are determined by irritation from external causes. The localization on the elbows and knees is determined, for example, by the fact that these prominent parts are naturally exposed to pressure and rubbing; whilst the skin, being immediately over the bone, receives no protection from a cushion of subcutaneous soft tissue. A similar explanation is given of cases in which a psoriatic patch develops on the forehead on the part which is compressed by the hat. This view is supported by experiments like the following: He scratched the forearm of a psoriatic girl with a blunt penknife, and in about three weeks a psoriatic patch had developed on the abraded surface. In another case a patch developed on the shoulder of a patient after the part had been cauterized by a solution of one in five of caustic potash. The same view is developed by a consideration of the sources of irritation to which the various localizations of psoriasis are attributable. For further and interesting details, reference to the original paper is recommended.—*London Med. Record*, Feb. 15, 1877.

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On the Influence of Water upon the Skin.

PROF. HEBRA commences a paper published in the first two numbers of the *Wiener Med. Woch.* for 1877 with the motto, "Gutta cavat lapidem non vi, sed sœpe cadendo;" and goes on to say that both in scientific works and in verbal statements assertions are made with respect to the influence of water, which are justified neither by scientific principles nor practical observation. In the observations he wishes to make on the matter he confines himself to the influence exerted on the skin, without going into the general question of the merits or demerits of hydrotherapeutics. And first as to its *influence on the healthy skin*, it is the general opinion that frequent cold and warm baths, and washing the skin with cold water, followed by friction, are conducive to health and do

no harm. This conclusion cannot be admitted; for, on the one hand, millions of men take no baths of any kind, and at most only slightly wash their face and hands once a week, and yet live to old age in the enjoyment of good health; while, on the other hand, no one is able to prove that the use of the various forms of baths ward off disease, or that washing in cold water furnishes any protective power against catarrh, rheumatism, etc.—diseases supposed to arise from catching cold. A comparison of the frequency of disease in towns where baths are frequently resorted to, and in the country, where they rarely can be got, says but little for their prophylactic power. And although it cannot be said that their frequent employment in towns is a cause of the greater mortality therein, neither can it be said that baths, and especially washing the body "all over" with cold water, is any protection against disease. As long as this "water manipulation" is accompanied by an agreeable general sensation, and no eruption on the surface of the skin results, it may be pursued as a pastime or amusement; but as soon as the skin reacts against the repeated irritation, and great itching, or erythema, urticaria, eczema, etc., are produced, the bathing and washing should at once be stopped, if we do not wish to induce skin diseases which may require months or years for their cure, and cause the subjects of them immense inconvenience. Much will depend upon the nature of the water used, and the mode of its employment, as simple warm and cold baths do not induce the same irritation of the skin as when they are accompanied by friction, douches, etc., or when the action of the vapour-bath is rendered still more intense by shampooing, brushing, etc. The consequences of such irritation sooner or later show themselves in the shape of permanent redness, a sensation of burning or itching, and the production of nodules and furuncles, which precede the formation of pustules and abscesses. These appearances, which formerly were regarded as critical and of good omen, should be attributed, as they are really due, to the mischievous effects of water. Every physician attached to large hospitals is familiar with the eczematous condition of the hands and arms of those of the working classes whose occupations compel them to manipulate water. To this class of affections belong the so-called bath eruptions, the *phydracia thermalis*. So also the affection termed by Prof. Hebra *eczema marginatum* is often induced by the prolonged application of wet bandages to the body, and surrounds the abdomen or back like a girdle, proving most obstinate in treatment, and causing violent and incessant itching.

If the reaction consequent on the prolonged employment of water will induce these effects on the apparently healthy skin of persons in good health, we may judge how much more frequent and intense will be its irritating effects on the skin *when in a diseased condition*. The skin does not first become "diseased" only when the redness and swelling of the numerous eruptions appear, but when its power of resisting injurious influences is diminished. Experience teaches us that those portions of the skin which, by reason of the pressure of articles of clothing, bandages, etc., or of the application of mustard-plasters, etc., become reddened, are the parts at which on the subsequent occurrence of diseases of the skin (as scabies, variola) the eruption shows itself in much greater quantity than in the other parts where neither pressure nor other irritant has been applied. The application of cold or warm compresses, and other proceedings of hydrotherapeutics, render the skin in the same way more sensitive and less able to resist noxious influences. How far the condition of other organs may be benefited by the manipulations that are injurious to the skin is another question. It is very commonly supposed that the effects of these applications may differ in their influence on the skin accordingly as they are used cold or warm—*i. e.*, between 5° C. and 40° C. But, as regards compresses, every one must have observed that, at whatever temperature they may be applied, they soon are equalized to that of the skin, unless they are frequently renewed. In an inflamed state of the skin, as in erysipelas, anthrax, furuncle, etc., it matters little whether they are treated with ice or hot cataplasms, as regards the progress of the disease; and in deciding upon the temperature to be employed, we should be guided by the subjective sensations of the patient. Every one must be aware that the different sensations felt after leaving a warm and a cold

bath are due to the difference in the temperature of the surrounding air, and are of very short duration, as such temperatures soon become equalized; and, in fact, the irritating effect of water cannot be attributed to the temperature at which it is employed.

In searching for other properties to which this may be due, we have to consider the softened and macerated state of the epidermis which baths induce, separating the old layers, which are removed by the subsequent rubbings, considerable quantities being held also in solution in the water of the bath. The cutis thus becomes exposed to the irritating effect of the water. Upon this are based the indications as to the use of water in treating diseases of the skin. Its employment is *contraindicated* in all sensitive, irritable persons whose skin is liable to prolonged redness, the production of rashes, and itching; in all cutaneous affections accompanied by acute swelling and serous infiltration; and in all chronic dermatoses in which the horny layer of the epidermis—either through the effects of disease or of remedies—has been removed, exposing the layer beneath. Thus it is not proper to employ water soon after using stimulating substances externally, as arsenic, iodic mercury, etc. By avoiding water, and employing starch or other inert powder, the healthy state of the surface will be much sooner restored. Water, on the contrary, is *indicated* in those diseases where its macerating and irritating effects are useful, viz., in chronic dermatoses, such as psoriasis, lichen, ichthyosis, pityriasis rubra, old eczema, prurigo, etc. Water also exerts the most beneficial effects when different secretions—the products of inflammation, and the remains of dead tissue—have to be removed, as in abundantly suppurating wounds, ulcers, and gangrene. It is useful also in favouring the formation of new epidermis in pemphigus, and after extensive destruction of the skin by burns or caustic substances.

After some observations upon the time which patients can continue in baths without ill effect on the skin, and for the purpose of obtaining its therapeutical effects, Prof. Hebra terminates his paper with the following conclusions: 1. Water is not an indifferent body in its action on the skin, but excites in it considerable irritation, which may give rise to diseased conditions of the organs. 2. Temperature does not play the chief part in the employment of water, which is due to the macerating action, and consequent irritation. 3. In prescribing compresses, ablutions, baths, etc., so far as the temperature is concerned, we should be guided by the subjective sensations of the patients. 4. General ablutions or baths, whether cold or warm, do not serve in any way as prophylactics against disease of the internal organs, while they frequently give rise to a diseased condition of the general surface. 5. If baths are to prove useful in diseases of the skin, they must be continued for a long period, *i. e.*, not under an hour at least. Warm baths in appropriate cases may be continued uninterruptedly day and night for months.—*Med. Times and Gaz.*, March 3, 1877.

Surgery.

Extirpation of Lymphadenoma.

M. Pauffard brought a case of lymphadenoma before the Société Anatomique of Paris. It is reported in the *Progrès Médical* of January 13. A young man, aged twenty-three, with a good family history, was admitted into the Lariboisière on March 23, 1876, with an enormous lymphadenomatous tumour on the left side of the neck. It had commenced four months before his admission, and according to his own idea, it had originated as a result of a strain. At this time he felt an acute pain in the neck, and in a few days he perceived, just over the acromion, a little lump, which slipped about beneath

the finger. This lump rapidly enlarged; he, however, continued his occupation, and paid little or no heed to it. In three months it had increased enormously in size. He then applied at the hospital for advice. On examination no other glands could be found affected; liver, spleen, and kidneys normal. There was an excess of white blood-cells; a *bruit de souffle* at the base of the heart and in the vessels, was heard. Patient was exceedingly pale. He was at first treated by injections of Fowler's solution into the enlarged glands, ten drops every morning. At the end of twelve days there was no improvement, local or general. Then, in addition to the subcutaneous injections, five minims of the solution were ordered internally, twice daily. This treatment was continued for two months, and there being no improvement, it was decided to extirpate the enlarged glands with the knife. A T-incision was made, the vertical branch of which ran parallel with the anterior border of the sterno-mastoid, and the horizontal ones directly backwards. "Masses of glands, hard and white as cartilage, adherent to each other, and extending to the transverse cervical processes, were removed; the large vessels of the neck were laid bare, as also the thyroid body; slight hemorrhage, in spite of the number of small vessels which had to be divided; catgut ligatures; Lister's dressing." Cicatrization commenced well, and the superior portion of the incision healed by the first intention. He was afterwards sent into the country; his general condition much improved. At the end of August he was readmitted to the hospital: at this time he was unable to move his left arm, (?) owing to paralysis of deltoid. There were large glands in the axilla and above the right clavicle. During the next month a mass of glands reformed in the scar of the old wound, which invaded the larynx. The patient died suddenly at the end of November. The autopsy showed, in addition to the glands in the neck, that the spleen was very much enlarged, and studded throughout with small nodules of varying sizes; these nodules were white and hard, and were embedded in strands of connective tissue, proceeding from the capsule, which was thickened. Mesenteric glands large; kidneys normal; lungs and mediastinum quite free. It will be seen that this case of lymphadenoma was complicated with leucocythemia, and therefore the prognosis from the first was less hopeful. In Mr. Haward's case, reported to the Clinical Society last session, there was no leucocythæmia; and it would seem, though this latter case also terminated fatally, that lymphadenoma, when uncomplicated, offers greater chance of being successfully eradicated than when complicated by a disease like leucocythæmia, which, *per se*, is often fatal. At all events, though these cases have both terminated fatally, it would be unwise to condemn an operation for the removal of growths which resist all other efforts of treatment, and which when left alone invariably terminate fatally.—*Medical Times and Gaz.*, Jan. 27, 1877.

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Treatment of Phagedænic Ulcers.

Weisflog, in a recent paper (Virchow's *Archiv*, B. 66), states that the pain of phagedænic ulcers ceases almost immediately if the patient is immersed in a "faradizing bath." One of the electrodes is connected with the bottom of the bath, and as soon as the wound is submerged in the warm water the patient touches the other electrode, which is covered with sponge, with the tip of one finger, gradually bringing the others into contact with the sponge, according to the sensation he experiences in the ulcer. The effects are less marked and less beneficial if the ulcer is out of water. For the purification of the wound he employs a weak ointment of nitrate of mercuric oxide (1 to 50). For the relief of the dolores osteocopi Weisflog recommends the use of subcutaneous injections of the solutions of the nitrate, which are much less painful than those of corrosive sublimate, and never cause abscesses; whilst much larger quantities of mercury can be introduced into the system without causing salivation.—*Lancet*, Feb 24, 1877.

On the Opening of Deep-seated Abscesses of the Forearm.

Dr. PARONA contributes an article on this subject to the *Annali Universali di Medicina* for November. He says that the difficulty of treating deep-seated abscesses in the forearm, and the frequent death of the patients, are well-known facts. One of the most grave inconveniences is that the methods of Nélaton and Dolbeau do not provide for the complete escape of pus, and are attended with risk of wounding the artery. From a careful study of the anatomy of the parts, Dr. Parona has arrived at the conclusion that an opening may be made easily, quickly, and safely on the ulnar side of the arm, through the pronator quadratus and the deep flexor muscles. For this purpose an incision is made parallel and slightly anterior to the ulna, commencing four-fifths of an inch above the articulating end of the bone, and passing nearly two inches upwards. The skin and subcutaneous tissue having been divided, an incision in the same direction is made in the aponeurosis, care being taken to keep the knife towards the bone rather than towards the inner margin of the flexor ulnaris. In this way the deeper part of the forearm is reached, the skin and aponeurosis only being divided, and the vessels and nerves left uninjured; and the escape of pus is rendered easy. Dr. Parona has employed this method in two cases with a rapidly successful result.—*London Med. Record*, Feb. 15, 1877.

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Thickening of the Septum of the Nasal Fossæ simulating Malignant Tumour.

In a thesis on the affections of the nasal septum (*Journal de Médecine et de Chirurgie Pratiques*, Nov. 1876), M. CASABIANCA describes two cases under the care of M. Verneuil, in which that surgeon was deceived as to the nature of an affection of the nasal septum, so much as to almost induce him to perform an operation. The first case was that of a woman twenty-five years of age, who was admitted into La Pitié for an affection of the nose which had commenced about a year before. During the last few months, it had made rapid progress and become very troublesome. The nose was almost double its proper volume, red, tense, and shining, and gave to the finger a false sensation of fluctuation. On putting the patient's head back, M. Verneuil saw at the entrance of the nasal fossæ a reddish, fungoid, papilliform mass completely obstructing both nostrils, and strongly resembling a papillary epithelioma. There was no engorgement of the lymphatic glands. Hesitation appearing impossible, M. Verneuil would at once have performed an operation, had he not been deterred by the fact that the patient was eight months gone in pregnancy. Three weeks after delivery, considerable improvement was seen; the swelling of the nose and the projection of the nostrils were much diminished, the tumour of the septum greatly reduced in volume, etc. The first diagnosis was then abandoned, and it became probable that the case was of a scrofulous or syphilitic nature. Antisyphilitic treatment gave no good result, but antiscrofulous treatment was more successful, and the patient got much better.

The second case was that of a lady aged fifty years, who suffered from an apparently serious affection of the nasal septum, which a distinguished surgeon had considered to be epithelioma. The nose was red, swollen, and tender on pressure; at the entrance of the nasal fossæ was a reddish tumour, firm to the touch, projecting from each side of the septum and almost completely obstructing both nostrils, rendering respiration almost impossible. This patient was put under antisyphilitic treatment, and completely cured. These two cases show that the septum is sometimes the seat of special hypertrophies, susceptible alternately of amelioration and of aggravation, which may at certain times present all the appearances of malignant tumour, especially of epithelioma. This thickening of the septum is caused by syphilis or scrofula, and is situated usually at the level of the cartilaginous portion. Usually bilateral and symmetrical, it is sometimes more prominent in one nostril, and may even

be developed on one side only of the septum. Its point of origin appears to be in the perichondrium. In the thickness of this fibrous layer there is found a plastic infiltration similar to that which exists in syphilitic periostitis; so that, in fact, the thickening of the septum is due to a chronic perichondritis. But it is difficult for the mucous membrane not to participate more or less in the alteration of nutrition. Joined by its deep surface to the perichondrium, it usually ends by becoming inflamed in its turn, with thickening, swelling, and finally ulceration.—*London Med. Record*, Feb. 15, 1877.

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Tracheotomy performed four times within a few years upon the same Patient.

At a late meeting of the Clinical Society of London (*British Med. Journal*, Feb. 17, 1877), Mr. Pugin Thornton brought forward a case of syphilitic laryngitis, in which the operation of tracheotomy had been performed four times. The case was remarkable also from the skin of the patient's face presenting a discoloration very similar to that produced by the long-continued administration of nitrate of silver. The patient, aged 67, a foreman in large horse-stables, contracted a chancre in 1867. This was followed shortly afterwards by a secondary rash. In 1869, concurrently with a rupial eruption, he had sore-throat, the voice being affected, followed some months after by difficulty of breathing. In 1870, the dyspnœa was so great, that his medical attendant informed him that in all probability tracheotomy might have to be performed. This, by treatment, was avoided, it not being until 1871 that the first operation was performed. From some impediment, believed by Mr. Thornton to be in consequence of the tracheal cartilages having become ossified, it was impossible to insert a tube, and the wound was allowed to close in four days. The man, however, experienced great relief by the operation, and was able to return to his work in a fortnight, continuing at it until 1874, when tracheotomy was for the second time performed. It was at this time the face began to get the bluish appearance the man presented at the Society, but whether it was before or after the operation he could not remember. Again, in the following year, recourse was had to tracheotomy, Mr. Dukes, of Spitalfields, being the operator in these last two instances. He, on both occasions, experienced great difficulty in the insertion of the tube. When the canula had been worn about a month after the last operation, it slipped out one night, and it was not for many hours that another (Fuller's bivalve) was put in. At the end of a fortnight, this had worked its way out through an abscess at the lower end of the operation-wound. At this time, the patient came under Mr. Thornton's care. He was then suffering from considerable dyspnœa, which, with his lividity of countenance, gave the impression that the man was in an alarming condition of asphyxia. On examining his larynx, Mr. Thornton found that, though the stenosis was very great, yet, by enforcing absolute rest in bed and with specific treatment, an operation might be avoided. It turned out so, and the man left after a short stay in hospital. In July, however, of last year, he came with such urgent dyspnœa, that tracheotomy had to be at once performed. The ossification of the cartilages was so great, that they were sawn through with much difficulty. The tube, on this account, was not removed for the purpose of cleansing until the eighth day. It was removed for good after it had been worn a little over two months. Mr. Thornton then explained that the stenosis was caused by thickening and ulceration of the vocal cord, the ventricular bands, and the epiglottis. He drew attention to the peculiar character of the discoloration of the face, and to the fact that it did not extend below the neck. The supposition was, that it was due to former imperfect aeration of the blood and non-recovery of the cutaneous vessels afterwards. Mr. Thornton also took occasion to remark upon the advisability of always having a fine saw at hand for use in similar cases.

Mr. Maunder said that, curiously enough, the man who had been just seen had for many years, while he resided in the city, been under his care from time to time for syphilis in all its stages. More than once, as a consequence of

laryngitis, tracheotomy had been imminent, but had been averted until the occasion first mentioned by Mr. Thornton. It illustrated very forcibly one of the accidents more or less inherent to the operation—severe hemorrhage from a vein, probably opening directly into the internal jugular, the bleeding occurring at the moment respiration was impeded by the introduction of the canula into the trachea on a pilot, the patient not being under the influence of an anæsthetic, and not under physical control. The bleeding relieved the apnœa, and the tube was not necessary on this occasion, the patient becoming quickly convalescent,

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Suprapubic Lithotomy.

Professor F. TRENLEDENBURG, of Rostock, in a contribution to the *Berliner Klinische Wochenschrift* (No. 2, 1877), on suprapubic lithotomy, states that the chief objection against this operation is the risk of urinary infiltration, and of phlegmonous inflammation in the loose paravesical connective tissue. This risk, however, has, he thinks, been much exaggerated. It has been proved by the experiments of Simon and Menzel that urine does not irritate the surface of a granulating wound, and that healthy and fresh urine injected under the skin becomes absorbed without causing mischief. On the other hand, urine, especially when it is mixed with blood and *débris* of tissues, if allowed to remain long in contact with healthy structures, and to stagnate and undergo decomposition, will certainly set up inflammation. When, after suprapubic lithotomy, suppuration takes place in the paravesical connective tissue, this is generally a consequence of neglecting to maintain a free and constant flow of urine through the canula. The author suggests that, after the operation, the patient should be made to lie on the belly for some days, and that a drainage-tube should be retained in the bladder, in order to allow a constant discharge of the urine. This drainage-tube, in order that it may not slip out of the bladder, should be traversed near its upper extremity by a cross-piece of gum-elastic material, which would form on each side of the tube a wing, as in Holt's retention catheter. There is usually very little difficulty, the author asserts, in keeping the patient—at least if it be a child—in the abdominal position. It is necessary that the bed should be soft and elastic, and that the wound be left quite free. The best arrangement, it is stated, is one of two large square cushions, containing air or water, placed so that the body and head of the patient rest on one, and the lower limbs on the other, an interspace being left, in which a vessel may be placed for the reception of the urine, which runs drop by drop through the drainage-tube.

A case is reported, in which a child aged two years, was cut above the pubes for stone, and afterwards treated in the above-described manner, with complete success. In this case the stone, which could be readily felt on rectal examination, was, by the forefinger introduced through the anus, lifted up against the anterior wall of the abdomen, and then removed through an incision made directly over and upon it.—*London Med. Record*, Feb. 15, 1877.

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Arrest of Hemorrhoidal Bleeding by Ergotin Enemata.

K. STRISOWER describes in the *Moskowa Med. Gaseta*, No. 13, 1876 (abstract in St. Petersburg *Med. Wochenschrift*, No. 9, and *Allgemeine Med.-Chir. Zeitung*, No. 51), the case of a man, aged 35, who had suffered for six months from profuse hemorrhoidal bleedings, which had resisted all treatment; only once solution of perchloride of iron arrested the hemorrhage for ten days. The patient's strength was greatly reduced. Dr. Strisower intended to inject ergotin subcutaneously, but was prevented by the patient, who feared the pain. He then injected a clyster containing five grains of ergotin in two ounces of glycerine. Ten days later, there had been no further bleeding; and in six weeks the patient had had no return of the hemorrhage, and was steadily regaining his strength.—*London Med. Record*, Feb. 15, 1877.

General Paralysis as a Predisposing Pathological Cause of Fracture.

M. Biante records an observation of a complex fracture of the humerus in a general paralytic (*Annales Médico-Psychologiques*. Nov. 1876). The recent communication of M. Le Dentu to the Surgical Society on a rare variety of fracture of the superior extremity of the humerus, and M. Broca's article in the *Gazette des Hôpitaux* on pathological fractures, induced M. Biante to give the following observation of an ordinary case of fracture of the shaft of the humerus, but more complete than usual, and complicated by several incomplete fractures, whose cause was found in the nature of the bone itself. On Feb. 1st, 1876, a patient in an asylum sustained a fracture of the humerus, which we shall denominate a comminuted fracture. A necropsy was made at so early a date after death as to leave the fracture in almost the same condition as when it occurred, for the patient, being well advanced in general paralysis, died soon after the injury. Although it does not present the same character as M. Le Dentu's case, yet it is interesting from many points of view, and we have felt it desirable to call attention to a pathological condition which all mechanical considerations apart seems to rest upon the general physiological conditions which follow as consequences of vaso-motor degeneration. The patient died of coma on the third day. At the *post-mortem* examination, the right shoulder was much swollen, and there was considerable ecchymosis over the deltoid. On reflecting that muscle, considerable extravasation of blood was found in the intermuscular spaces. This was seen to be a very elongated oblique fracture of the shaft, and also a second fracture separating the surgical neck from the upper fragment; the medullary substance of the bone presented the appearance of a bloody pulp, as seen on drawing the fragments apart. There were two radiating fissures in the upper fragment to the outer side of the bone, which, however, had no point of departure from the other fracture. For this reason, the fracture is spoken of as being complex rather than comminuted. As the main fracture of the shaft split the bone obliquely, leaving the point of the superior fragment at the insertion of the deltoid, and the point of the inferior fragment near the surgical neck on its axillary surface, these lozenge-shaped fissures were situated in the base of the upper fragment. This case would almost have been identical with that of M. Le Dentu, had these fissures been the direct effect of external violence. The fall in this case was simply on the shoulder, and could not involve the same force as a fall from an elevated position. We must therefore conclude that, if the patient had not been a general paralytic, the lesions would not have been so severe. The cause was quite inadequate to produce so severe a result if the subject were healthy. A few days before a general paralytic made a false step, and being unable to save himself, fell to the ground, fracturing the left tibia at the junction of the upper with the middle third, and not involving the shin, contrary to what generally happens in this kind of injury.

Among general paralytics, the alternations of the great sympathetic induce disorders in the majority of organs, changes which border upon fatty degeneration or other modifications of their tissue-elements.

The bones are not exempt from this general affection; we have examined many bones of these subjects with the microscope, and have found in the medullary spongy and compact portions alterations consisting in a proliferation of adipose tissue and of fat-globules running through all parts.

The compact tissue in some parts is thin beyond measure, and, compared with the same bone in another subject, presents considerable differences. Indeed, the bones have in all their parts the aspect of those which are the subject of osteitis, but without increase of vascularity. Yet the morbid process is not of the same nature, as in this case there was neither inflammation nor suppuration, but simply a slow process of destruction without power of repair, and formation of necrobiotic elements, progressive diminution allying itself intimately with central vaso-motor changes. And it is these phenomena which induce one to pause before venturing upon an operation in a patient the subject of them. To touch a general paralytic patient surgically, may give the final blow and prove fatal. But while citing pathological anomalies, which militate

against recovery in general paralysis, we must also cite cases where recovery has taken place. The fracture of the tibia consolidated after two months' treatment. The same patient had sustained a compound comminuted fracture of both bones of the right leg four years before his admission. There had been no union, and there were many fistulous passages, so that amputation had at last been considered necessary when the mental affection had rendered his being sent to the asylum absolute. It was thought, however, best to leave it to nature, amputation being undesirable in such a subject; and nature proved a good mother in this case, for in seven months he was walking about. This favourable result was, however, quite an exception. To conclude, we think that we are right in saying that the fracture of the humerus would not have occurred, except in a general paralytic, and that general paralysis is essentially a disease of disorganization, attacking all the tissues of the economy, and substituting for their proper elements other heterogeneous elements. Hence the bones attain an anomalous predisposition to fractures, from causes inadequate for their production under ordinary circumstances.—*London Med. Record*, Feb. 15, 1877.

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Shortening of the Lower Limb after Fracture of the Femur.

Dr. JARVIS S. WRIGHT, Professor of Surgery at the Long Island College Hospital, confirms (*Archives of Clinical Surgery*, Feb. 1877) the observations of Dr. W. C. Cox (*American Journal of the Medical Sciences*, April, 1875) as regards the inequality in length of the normal lower limbs in a large proportion of cases.

Dr. Wright's investigations have led him to the following conclusions:—

First. The lower limbs of the same person are not always of the same length.

Secondly. The greater number of lower limbs, comparing the limbs of the same person, show a difference in length.

Thirdly. The normal limbs that I have measured give the following result: The left lower limb is oftener longer than the right lower limb, and the right lower limb is nearly as often longer than the left lower limb.

Fourthly. About one person out of every five has lower limbs that measure the same length.

Fifthly. The difference in the length of the normal lower limbs of the same person, varies in different cases—from one-eighth of an inch to one inch. I have considered every difference less than one-eighth of an inch as no difference. And I found one case, in which the left limb measured one inch and three-eighths of an inch longer than the right limb; of course, I recognize the extreme difficulty of making exact measurements of normal limbs; but the same difficulty supervenes to perplex the measurements of lower limbs, one of which has a broken femur; and if it is proper and justifiable to make comparative measurements of broken bones, before and after union, it is admissible to make comparative measurements of unbroken bones. The facts are as reliable in one case as in the other.

Sixthly. I have measured the lower limbs of cadavers and of skeletons, the soft parts having been removed by dissection. These measurements confirm the above results.

If Dr. Wright's investigations and observations are correct—

I. To assume an equality in the normal length of the lower limbs of a patient who has a broken femur, would, in many cases, involve an error of more or less gravity. In other words, it would be quite impossible to say, from the most careful measurements, how much a broken femur had shortened a limb, if the uninjured limb is made the standard of comparison. And a correct and reliable conclusion could only be reached in a case in which the injured limb had been measured *before* and *after* the injury. There are more chances against than for an assumption of an equality of length in the lower limbs of any one case.

II. Suppose a case: A man's left lower limb measures one inch longer than his right lower limb, and he has never been injured. Let him fall and break

his right femur. It would certainly be very unscientific, unskilful, and perilous to apply extension and counter-extension so forcibly as to make the injured limb as long as the other. Having in mind the great strength and resistance of the fascia of the thigh, I must say that in such a case, such extension would be impossible; and, if it were possible, it would be unjustifiable. Or let him break his left femur. A moderate degree of extension and counter-extension would make the injured limb as long as the other, and readily keep it as long. Such cases as this are quite often met in one's surgical experience. Circumstances sometimes favor the surgeon, but they are quite as often against him. We get credit when we deserve it least, we get blame when we deserve most praise.

III. Practically, in some cases of fracture of the femur, I have easily made the injured limb as long as the other, and have supposed the good result to be partly due to skill in treatment. In other cases, I have found it absolutely impossible, by any justifiable means, to prevent as much as an inch shortening. Cases of extreme shortening after fracture of the femur have not fallen to my lot. A specimen of very great shortening of a broken femur, with firm union, you will find in the museum of the college. Now, I have often accused the muscles and fascia for interfering with my attempts to obtain perfect results. Why, the femur is playing the trick of evolution, it varies in length!

IV. I have always held, that, in a certain number of cases of fracture of the femur, shortening will occur after any treatment, and have so testified before legal tribunals, usually putting the average shortening, when shortening takes place, at about one inch; and I must now add to the accidental and the ordinary causes of shortening in cases of fracture of the femur, an important one, namely, a quite common inequality in the length of the lower limbs whose bones have never been broken.

V. If these results are based on sound observation, they affect materially suits at law for malpractice; for, if a patient has had a fracture of the femur, and the corresponding limb be an inch or more shorter than the other after treatment; and if the patient feels himself aggrieved and sues his surgeon, on account of the apparently unusual shortening; and if it can be shown, that, in a considerable number of cases, lower limbs whose femora have not been broken are not of equal length, then the surgeon has a good cause; in fact, he is unquestionably armed with a strong defence over and above his having used all due diligence in the care of his patient. Because, no surgeon can be expected to repair a broken bone, so that it will be more perfect than it was originally. And I need not tell you, that these facts bear heavily on any one who may claim the skill and the ability to prevent shortening, in the treatment of all cases of fracture of the femur; and who may boast of having so applied the art of setting broken bones, that he has actually made the broken bone longer than the corresponding unbroken one. In fact, I have treated two cases of fracture of the femur, occurring within two days of each other; the patients were put in beds, side by side; one was a boy, the other was an adult; the adult had the minimum of surgical attention, and recovered with lower limbs of the same length; the boy had the maximum of surgical attention, and after union of the fragments of bone, the injured limb was one inch shorter than the other. Let me add, that the extending weight for the boy was half as heavy again as that for the adult.

Dr. Wright thinks we are entitled to make the following practical conclusions:—

1. We need not expect in all cases of fracture of the femur to give the patient lower limbs of equal length. In other words we cannot always prevent the so-called *shortening;* the number of shortened limbs cannot be accurately fixed.

2. In a certain number of cases of fracture of the femur the injured limb will remain shorter than the other—no matter what the treatment may have been.

3. Excessive efforts persisted in to bring the injured limb down and make it as long as the uninjured one will sometimes fail, and are calculated to do harm; since the strong fascia of the thigh offers great resistance, and since the injured limb may have been shorter than the other before the injury.

4. If need be, complete relaxation of the powerful muscles of the thigh by etherization will enable an ordinary and admissible degree of extension and counter-extension to give the injured limb a maximum length; or extending weights gradually applied will "tire out" the muscles; at first apply four pounds, then add to that four more pounds, then make the weight twelve pounds, now increase the extension to sixteen pounds, and in some instances make the extending weight twenty pounds, removing a certain part of the extension as may be considered necessary.

5. The possibility of having the injured limb longer after treatment than the other must be recognized, and the most probable explanation of such a result must be given.

6. These conclusions conform to the practice and agree with the results of the best surgeons.

Finally, perhaps I ought to add, that the variation in the length and obliquity of the neck of the femur, incident to the age of the patient, may not occur during the same time and with equal pace in the femoral necks, and that this may be one cause in some instances of a difference in the normal lengths of lower limbs. At any rate it may be noted that there is a remarkable approach to an agreement between the differences in the length of normal lower limbs, and the difference in length of lower limbs—one of which has had the femur broken; only the average difference is somewhat greater in case there has been a fracture of the femur. But, in general, the tendency of a fracture of the femur is to shorten the limb to which it belongs. And we may fairly regard assertions of always having lower limbs of equal length, after treating fracture of the femur, as open to just criticism. Such assertions are calculated to put individual surgeons in peril of suits at law for malpractice when they do not deserve it; and they are, if found to be untrue, a sure means of throwing discredit on a useful and an honorable profession.

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Infra-spinous Luxation of the Humerus.

This case of infra-spinous luxation of the humerus is worthy of record, partly from the extreme rarity of the lesion, and partly because its mechanism was established by the patient in the clearest manner. The descriptions given of this dislocation are often very meagre. Malgaigne, in his *Traité des Luxations*, gives a short account of two cases. Sir Astley Cooper relates six other cases; in all his cases reduction was extremely easy. Later on, M. Sédillot, in the year 1834, presented a case of infra-spinous luxation of the shoulder to the Academy, which had been mistaken for a fracture of the scapula. Another case came under the care of M. Tillaux in the year 1867. Most authors are agreed as to the mechanism of this dislocation. Sir Astley Cooper regarded it as determined by the contraction of the muscles situated in the infra-spinous fossa, together with a shock on the anterior portion of the shoulder. Nélaton admits the possibility of its production by direct violence from before backwards. M. Tillaux is of opinion that it may be produced by torsion.

R. J——, aged fifty-nine, a mechanic, was admitted into M. Tillaux's Ward at Hôpital de Lariboisière, Paris, on December 26th, 1876, for an abscess situated under the pectoral muscle. On examination, a deformity of the right shoulder was at once detected. In the month of February, 1870, the patient was going upstairs, when he met some one who was coming down at the same time. He prepared to place himself in such a manner as to let the person pass, but in so doing his foot slipped, and he fell against the border of a step, striking the anterior part of the right shoulder. Under the right arm he was carrying a parcel, and in order not to let this fall he flexed his arm violently and brought it firmly against the thorax. This movement naturally tended to thrust the head of the humerus directly outwards. The weight of the body completed the luxation, by carrying the head directly backwards. Two hours afterwards, not being able to make use of his arm, he consulted a surgeon, who placed the arm in position by means of bandaging, but the patient could not say whether the luxation was reduced or not. Be this as it may, at the present moment

there exists an infra-spinous luxation of the humerus, which the patient can reduce at will by means of simple muscular contraction, and which the surgeon can reduce with the greatest facility. But the displacement returns as soon as the muscular contraction ceases. The signs are as follow: In front the infra-clavicular depression is effaced. The shoulder is brought nearer to the median line, and is lowered. The anterior wall of the armpit is diminished in its vertical measurement. Outside there is a prominence formed by the acromion, with a depression underneath. On the posterior surface of the shoulder the head of the humerus projects under the spinous process, and forms a rounded tumour. The inferior angle of the scapula is further from the spinal column on the right side than on the left. The head of the humerus can no longer be found in the armpit. The patient has been able to make some use of his arm, having continued to carry on his occupation, but the movements are extremely limited. Elevation of the arm is impossible, but he can draw the arm to the thorax. The chief movements of this arm are situated at the elbow, and these permit of the patient making use of his limb to a certain extent.—*Lancet*, Feb. 3, 1877.

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Dislocations of the Thigh: Their Mode of Occurrence as indicated by Experiments and the Anatomy of the Hip-joint.

Mr. Henry Morris presented a paper at a late meeting of the Royal Medical and Chirurgical Society (*British Med. Journal*, Feb. 17, 1877), the object of which was to show that dislocations of the thigh on to the dorsum of the ilium never occur, as is usually stated, while the limb is abducted, unless the dislocation is complicated with fracture; that all kinds of dislocation take place while the limb is abducted; and that it depends upon the degree of extension or flexion, and of external or internal rotation associated with the abduction at the moment of accident, whether the head of the femur will be thrown forward or backward. The anatomy of the hip-joint, the results of experimental dislocations in the cadaver, and the positions of the body at the time when dislocation has actually occurred in the living, were adduced in support of this view. The conclusions arrived at in the paper were the following: 1. The ilio-femoral ligament is a thickened triangular or fan-shaped area of the capsule of the hip-joint and not a Y-shaped ligament; besides the ilio-femoral band, there is a large portion of the capsule very thick and strong; and, if two lines be drawn, one from the tuber ischii to the top of the trochanter major, and the other from the anterior inferior iliac spine to the trochanter minor, all the capsule between them above is thick and strong, whereas all below and between is thin and weak. 2. The thickened portion of the capsule determines the kind of manipulation necessary for reduction, and should be relaxed by flexion and abduction during any attempt to reduce a dislocation of the thigh. 3. The degree of extension or flexion and of external or internal rotation of the thigh at the time of luxation determines whether the dislocation will be pubic, thyroid, sciatic, or dorsal; and subsequently the "bridling" effect of the thickened portion of the capsule fixes and gives character to the dislocation. 4. All dislocations of the thigh, uncomplicated with fracture, occur while the limb is abducted. 5. Posterior dislocations result when flexion and inward rotation accompany abduction; and the anterior when extension with outward rotation accompany abduction; while the downward or thyroid variety occurs during extension and abduction. 6. Of the movements of the usually successful methods of manipulation, the head of the femur is brought (by flexion, abduction, and reverse rotation) to the part of the capsule through which it was displaced, viz., to the lower and inner side of it. 7. The new position of the head of the femur in the sciatic as in the dorsal dislocations is above the obturator internus muscle, though in both varieties the bone leaves the acetabulum through a rent in the capsule below the muscle; and for these reasons the classification of the posterior dislocations into "dorsal above" and "dorsal below" the obturator internus, as made by Bigelow and followed by others, is misleading if not invariably incorrect. 8. Dislocation through a "button-hole" is not possible, owing to the inelasticity of the capsule and the

large size of the head of the femur compared with the width of the capsule from pelvis to femur; and in the reputed cases of unsuccessful efforts at reduction of this sort of dislocation, the real obstacle has been either a portion of muscle or of the capsule itself carried before the head of the femur into the acetabulum, or of a fragment of the head of the femur left in the acetabulum. 9. The rim of the acetabulum of itself offers no real resistance to reduction. 10. In the exceptional case of a direct dorsal dislocation, the untorn muscles and capsule would resist reduction by ordinary manipulation; and this resistance would be appreciable by the surgeon. 11. Direct dorsal dislocations, or those which are said to occur during abduction, are always the result of immense violence, and are always associated with fracture of the acetabulum, or of the head of the bone or of both. 12. Violent pain in dislocations at the hip is caused by the sciatic nerve being pressed upon or looped up by the femur; and pain or paralysis after reduction is due to dragging forward of the nerve upon the neck of the bone, or to its rupture in the act of reduction. 13. In reducing dislocations associated with great pain, it would be well to draw the head of the bone away from the side of the innominate bone during the movements of flexion and abduction, so as to disengage the sciatic nerve and thus prevent either of the accidents above mentioned.

Mr. Willett could not admit the novelty of Mr. Morris's views. Some years ago, a German surgeon—he believed Prof. Busch—had visited the London hospitals and demonstrated that all dislocations of the thigh-bone occurred during abduction; that it depended on the subsequent arrangement of the limb whether the head of the bone should be thrown backward or forward. This doctrine had since been an article of faith at St. Bartholomew's Hospital; and Mr. Willett had for some time taught it to his class. Within the last ten or twelve years, also, it had been the almost universal custom to reduce dislocations of the thigh by manipulation, the whole process of which depended on the fact of the capsule being rent at the lower part. Mr. Maunder said that it was evident that the author of the paper had devoted much attention to the subject, and he thought he had proved his case. He had no doubt that Mr. Morris's researches were made quite independently of those of Prof. Busch, with which they agreed; but he would ask how it was that Malgaigne, who had carefully studied the subject, had not found that the dislocation was produced in the way now described. Malgaigne spoke of rupture of the lower part of the capsule as the exception rather than the rule. Mr. Barwell had no doubt that dislocations of the femur were produced in the way described by Mr. Morris. He mentioned the case of a man on whom a mass of coal fell on his sacrum in a coal mine; this, it might be supposed, would cause the head of the bone to be thrown backwards, whereas it was dislocated forwards on the anterior inferior spine of the ilium. He agreed with Mr. Morris in regarding the ligamentum teres as of little importance in the prevention of dislocation; it probably did little more than protect the vessels passing to the head of the bone. He saw a case some years ago, in which there was congenital absence of the ligamentum teres; but he had no reason for believing that the man was more liable to dislocation of the femur than other persons. Mr. Mac Cormac said that he had never been able to drive the head of the femur out of the acetabulum except at the lower part of the capsule. He asked if any observations had been made in which the head of the femur was embraced by the obturator internus. Mr. Morris, in reply, said that he was not aware that the views which he brought forward had been already taught. It was stated in surgical books, even in the latest editions of the works of Bryant and Holmes, that dislocations of the femur occurred during abduction. As to manipulation, neither Bigelow nor Hamilton explained its results by assuming the theory of abduction, but by supposing that it broke down any portion of the capsule that might prevent reduction. In the days of Malgaigne, experiments were probably not so often performed as now; and it was rare to have an opportunity of making a *post-mortem* examination of a case of dislocated femur. He did not attach much importance to the ligamentum teres; and believed that it had no power to hold the bone in its place. He was not aware of any case in which the head of the bone was embraced by the obturator internus muscle.

Case of Caries of the Trochanter Major successfully removed with the Chisel and Mallet.

Mr. THOMAS ANNANDALE, Surgeon to the Edinburgh Infirmary, reports (*British Med. Journ.*, Feb. 17, 1877) the following case as an addition to the already recorded instances of caries confined to the trochanter major without any involvement of the hip-joint, and also as an illustration of the advantages of the chisel and mallet in removing bone from situations not easy of access to the saw. He is inclined to think that the disease in the present case had its origin in inflammation and suppuration of the bursa, lying between the trochanter major and the insertion of the gluteus minimus muscle.

D. M——, aged 25, was admitted into the Infirmary under Mr. A's care on May 17, 1876. For more than three years previously to his admission, he had suffered from pain in the region of the great trochanter and hip-joint, and he had been repeatedly blistered over the painful part, but without benefit. Three months ago, a swelling formed on the inner side of the corresponding thigh immediately below the groin, and has since steadily increased in size.

When examined the patient was found to have flattening of the buttock on the affected side, and there was well-marked fulness over the great trochanter. There was tenderness on pressure over this process, but the movements of the hip-joint caused no pain. The swelling in the thigh was a large abscess. On May 25th, the abscess was opened with antiseptic precautions, and the wound dressed in the usual way. Six weeks after the operation, the patient was sent to the convalescent hospital, the wound not being completely closed, but discharging only a small quantity of thin pus.

On July 31st, the patient's symptoms were much the same as before, and the wound was discharging more freely.

On August 25th, the trochanter major was exposed by a free incision, and then it was found that a portion of its anterior and external surfaces was affected with caries. The disease was superficial, and involved a surface measuring about two inches in length and one in breadth. The surrounding bone and the hip-joint were healthy. The diseased surface, to a depth of about a quarter of an inch, was chipped off with the chisel and mallet, and a clean-cut healthy surface of bone resulted.

After the removal of the diseased bone, the patient's progress was good, and he was dismissed on September 20th with a strong and useful limb and with perfect movement in the hip-joint. Both wounds were soundly healed.

—

Excision of the Branches of the Fifth Pair in Neuralgia.

Prof. WEINLECHNER, in a communication to the Vienna Medical Society (*Wien. Med. Woch.*, Jan. 20), stated that he had performed excision of the branches of the trigeminus in twenty cases of severe neuralgia. He had found the operation much more successful when the neuralgia was limited in extent than when it was diffused. The deeper and more central was the resection, the more certain was the relief of the neuralgia; but in very deep excisions we are deprived of the possibility of again resorting to the operation in case a relapse might render this desirable. Comparing this operation with that of tying the common carotid, we may say that in very obstinate and painful cases both modes of procedure may produce a temporary or permanent cure; but neither method is without danger, as they both are sometimes followed by pyæmia, erysipelas, etc. In general the ligature of the artery is the easier operation of the two; but in old persons there is the danger of atheromatous degeneration, while in the younger ones, if the ligature is followed by hemorrhage, severe disturbances of the cerebral nutrition may ensue. As a general rule it may be stated that neurectomy is to be preferred in limited neuralgia, while in diffused neuralgia with vascular dilatation ligature of the carotid should be performed.—*Med. Times and Gaz.*, Feb. 24, 1877.

The Formation of Pigment in Melanotic Sarcoma, and in Simple Melanoma of the Skin.

GUSSENBAUER (Virchow's *Archiv*, vol. 63, 1875) says that there are three stages in the formation: 1. Slowness, and finally arrest of the circulation with dilatation of the capillaries; 2. Solution of the hæmoglobin in the blood-plasma, and its diffusion through the vascular wall, and its imbibition by the cellular elements of the tissues; 3. A deposit of the pigment in the form of granules.—*Lond. Med. Record*, Feb. 15, 1877.

Midwifery and Gynæcology.

Delivery obstructed by an Intra-Pelvic Fibroid.

In the last number of his treatise on the sacciform development of the posterior uterine wall during pregnancy, Prof. DEPAUL describes a case in which such a condition was closely simulated by a subperitoneal fibroid tumour, occupying the posterior portion of the pelvis. The patient was thirty-six years old, had been married about eleven months, and had reached the full term of her first pregnancy. Menstruation had previously been regular, and commenced at the age of twenty. She had never suspected the existence of any tumour; her abdomen previous to pregnancy had been flat, and the course of the pregnancy itself had been normal. Labour-pains commenced on the night of November 18, 1876, and a few hours afterwards the liquor amnii escaped. A midwife, who was summoned, declared that all was right, and that the labour would soon be terminated. Not being able to detect the os or cervix, she had probably supposed it to be fully dilated, and had mistaken the tumour, which was afterwards discovered, for the fœtal head. Labour-pains continued vigorous all through the 19th, but towards evening became less frequent and less strong. They continued at somewhat long intervals until the 22d, but the patient was able during this time to get about the house. On the 22d a loop of the funis, flaccid and 20 cm. in length, became prolapsed outside the vulva. It was doubtful whether the midwife had made tractions upon it, but she denied having done so. A practitioner, who was now called in, found that the os uteri was out of reach, and recommended the patient to be removed to the hospital.

She was not admitted until the 24th, five days from the commencement of labour. She was then much exhausted, pulse 112, tongue dry and abdomen tender. There was a sanious and fetid discharge from the vagina. A rounded prominence was felt in the lower part of the abdomen in the middle line, having a small subperitoneal fibroid, as large as a nut, attached to its surface, and itself resembling a fibroid tumour attached to the anterior uterine wall, although it afterwards turned out to have been formed by a part of the fœtus covered by the uterus. On vaginal examination a smooth firm rounded mass was felt, resting on the perineum, and resembling a fœtal head covered by the uterine wall, but giving no sensation of osseous resistance. A narrow cleft existed between this mass and the pubes, and the cervix could with difficulty be reached, being situated 1 cm. above the symphysis. It had still a length of 10–12 mm. and admitted the finger, which, however, did not reach any presenting part. So far the diagnosis was uncertain between sacciform development of the posterior uterine wall and retro-uterine tumour. The patient was therefore placed under chloroform, and Prof. Depaul, with much difficulty, introduced his hand into the vagina. He succeeded in getting first two and then three fingers into the cervix, and dilating it somewhat. He then found that the mass in the pelvis was not formed by a part of the uterine cavity, but was

closely united with the uterus. An attempt was made to push it up out of the pelvic cavity, but it was found to be quite immovable. A foot could be felt above the os, but the hand could not be introduced high enough to seize it. Uterine contractions having been set up afresh by the manipulations, Professor Depaul decided to wait three hours to see whether the os would dilate; by the end of this time no advance had been made. He then again administered chloroform, and at length succeeded in seizing the foot with a pair of long-toothed forceps, and drawing it down. The extraction then presented no extreme difficulty, on account of the advanced state of decomposition of the child. It was effected at first by the aid of the blunt hook, and then by that of two fingers hooked over the lower jaw. The mother afterwards had symptoms of peritonitis, which were treated by inunction of mercury with belladonna and antiseptic injections. She died, however, on the tenth day. At the autopsy the intestines were found glued together by plastic peritonitis, and there was a small quantity of purulent fluid in the pouch of Douglas. There was no laceration of cervix or uterus. The tumour was not adherent; it was a fibroid attached on a short narrow pedicle about the middle of the posterior uterine wall, measuring 13 cm. transversely, 10 vertically, and 7 in thickness.—*Obstetrical Journal of Great Britain*, March, 1876, from *Archives de Tocologie*, January, 1877.

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A successful Case of Cæsarean Section, in which Silver Sutures were used for the Uterine Wound.

Dr. LUNGREN, of Toledo, U. S., relates (*Archives de Tocologie*, Jan. 1877) the case of a patient, aged twenty-nine, the subject of severe rachitic deformity of the pelvis. She married at the age of twenty-one, and became pregnant four times. The first time the fœtus perished about the sixth month and was spontaneously expelled about a week after. The second time abortion was induced at the third month. The third time abortion occurred from unknown causes at the fourth month. In her fourth pregnancy she came under observation at the seventh month. Dr. Lungren decided to induce premature labour, and commenced doing so by dilating the os with Molesworth's elastic dilators. This was done until the largest dilator was reached, and it was then found that there was an unexpected degree of contraction at the brim. The promontory of the sacrum reached into the centre of the cavity, resembling a fœtal head, and the maximum antero-posterior diameter did not exceed from two and a quarter to two and a half inches. The membranes not having been ruptured, it was resolved to abandon the induction of labour, and let matters go on to full term.

Labour commenced on May 8th, 1875. The operation of Cæsarean section was undertaken when the os uteri was dilated to about an inch, filled with the pouch of liquor amnii. A final examination having been made under chloroform, it was thought that embryotomy would be so difficult as to be very dangerous for the mother, while it would certainly sacrifice the child. The placenta was found to be attached at the anterior surface of the uterus, and was wounded before the incision in its walls was extended to a length of two inches. Upon this the membranes were ruptured by the vagina, to prevent the liquor amnii escaping into the peritoneal cavity. The uterine wound was then enlarged to a length of six inches, and the fœtus was extracted by the head. It was alive, and immediately began to cry. The placenta was removed directly after. At this moment profuse hemorrhage occurred, but by grasping the uterus with both hands, some contraction was induced, and the bleeding partially checked. The edges of the uterine wound, however, gaped widely, and blood continued to escape through the opening. Four sutures of silver wire were then inserted through the uterine wall, passing just short of its mucous membrane. Each wire was twisted twice only, care being taken to bring the edges of the peritoneum in apposition, then cut short, and the ends bent down into the wound. The hemorrhage was then arrested. After sponging out the peritoneum, the abdominal wound was at once closed. For the first twenty-four hours there was rather acute pain, but after the first day the

pulse never rose above 80, nor temperature above 100.5°. Five weeks after the operation she was attending to her household duties and washing the household linen.—*Obstetrical Journal of Great Britain*, March, 1877.

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On the Signification of Sub Peritoneal Emphysema during Labour.

In the *Zeits. f. G. und Frauenk*, 1, 2, Dr. HERMANN LÖHLEIN gives several cases in which this form of emphysema was the result of rupture of the uterus. Kiwisch has mentioned the presence of air in the iliac fossa as being diagnostic of rupture of the uterus. Dr. Löhlein quotes a case by Fasbender, where he diagnosed sub-peritoneal emphysema by the emphysematous crackling. The case was one of placenta prævia; the vagina had been tamponed. The extraction of the fœtus showed it to be in a decomposed state. The emphysema was therefore due to the penetration of gas. The emphysema disappeared, and the woman recovered. E. Martin saw a case where ante-uterine emphysema was the result of perforation of the posterior wall by a catheter in the hands of a midwife. This gave rise to the infiltration of pus in the anterior wall and the connective tissue of the right parametrium. Dr. Löhlein remarks that very little attention in Great Britain or in Germany has been accorded to this phenomenon.—*Medical Examiner*, Feb. 22, 1877.

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The Prophylactic Treatment of Eclampsia.

In the *Bulletin Général de Thérapeutique* for September 15, 1876, Dr. CERSOY, of Langres, urges the great value of bromide of potassium, both in cases where there are symptoms which give rise to a fear of eclampsia, and in those in which convulsions have already occurred before the full term of pregnancy, but a hope remains that, under suitable treatment, the convulsions may be checked, and the patient enabled to go to full time. He relates two cases illustrating this treatment. The first was that of a primipara, aged seventeen. At the seventh month of pregnancy violent convulsions set in without premonitory symptoms, and were repeated at intervals of not more than half an hour. The face was slightly œdematous, and the urine contained a large quantity of albumen. An attempt was made to apply leeches to the temples, but the patient could not be restrained, and tore them off as fast as applied. Chloral was then given in large doses, partly by mouth and partly by rectum, combined with hypodermic injections of morphia. The attacks became more feeble, but did not cease until the enormous dose of ten grammes of hydrate of chloral had been given in the course of about six hours. The patient was then treated with bromide of potassium in doses of from five to six grammes in the twenty-four hours. No further nervous symptoms occurred, but the proportion of albumen in the urine did not diminish. About a month later she was delivered naturally of a stillborn child, which appeared to have been dead for a considerable time, probably since the period at which the convulsions occurred.

The second case was that of a primipara at the eighth month of pregnancy, to whom Dr. Cersoy was called in on account of œdema of the face and extremities, accompanied by vertigo, flashings in the eyes, and singings in the ears—that is to say, some of the premonitory symptoms of eclampsia. The urine was found to be highly albuminous. The treatment adopted was the administration of bromide of potassium in doses of five grammes in the twenty-four hours. A milk diet was also prescribed, but was not followed out absolutely. Under this treatment all the nervous symptoms quickly disappeared, but the amount of albumen in the urine rather increased than diminished, and shortly before delivery the proportion, after settling, was the enormous one of one-half. The œdema also continued to increase, but nevertheless the labour was perfectly normal, and a healthy child was delivered.

The author considers that eclampsia is a neurosis due to reflex irritability, which is especially likely to occur under the influence of albuminuria, because then the blood is impoverished, and the nerve centres ill-nourished. He therefore considers it more important to treat the reflex sensibility than the albu-

minuria itself, expecting that the latter will subside after pregnancy. He points out that in the case last related the use of milk diet, as suggested by Professor Tarnier, had no effect in ameliorating the albuminuria, although it was scarcely put to a fair test, because not exclusively adhered to.—*Obstetrical Journal of Great Britain*, Feb. 1877.

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Albuminuric Retinitis during Pregnancy associated with Eclampsia.

In the *Archives de Tocologie* for Oct. 1876, M. Wurtz relates the case of a patient under the care of Professor Depaul. She was thirty-nine years of age, and had been delivered naturally of her first child nine years before. Two years later she had had a miscarriage at the third month, but her general health did not suffer. At the end of June, 1875, she again became pregnant. She felt no inconvenience until the sixth month, when she began to suffer from vomiting every morning, and from occasional giddiness, and an impaired memory. Towards the seventh month she was attacked by violent and persistent frontal headache, with frequent exacerbations, accompanied by noises in the ears. On the 25th of February, towards the end of the eighth month, she was attacked in the street by a fit, in which she became unconscious, fell down, and bruised her head. Two more fits occurred during the day, and she became comatose until the next morning. On the 26th she was admitted into the hospital. She was then suffering intense headache, and the sight was considerably affected. Her faculties seemed blunted, but she was able to answer questions slowly. There was a slight convulsive movement of the lips in speaking. There was not the slightest œdema anywhere, but the urine contained a large quantity of albumen, 15 grammes of urine giving a precipitate of 4 grammes of albumen. She was treated by the application of five leeches behind each ear, and liquid diet. On March 2d, the headache disappeared, but the sight had become worse. The proportion of albumen had decreased to 2 grammes in 15. On the 3d there was only a trace of albumen, but the quantity increased again in a few days. On the 9th the fœtal movements ceased, and the breasts became turgid with milk. On the 13th labour came on, and about midnight she was delivered of a still-born and macerated fœtus, weighing 1280 grammes. Ophthalmoscopic examination both before and after delivery gave the same result. Numerous patches of hemorrhage were scattered over the retina, and there were also a number of white spots, and the optic disk was somewhat anæmic. For several weeks after delivery there was no improvement in the state of the urine, or in that of the sight; but at the end of six weeks some amelioration had commenced.—*Obstetrical Journal of Great Britain*, Feb. 1877.

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A Lithopœdion dating back Fifty Years.

Dr. Hans Chiari lately demonstrated before the Vienna Medical Society (*Wien. Med. Woch.*, No. 42) a very curious specimen. A woman, eighty-two years of age, died in the hospital of pneumonia, and thus gave an opportunity of examining into the nature of an indurated tumour of the abdomen, about the size of a man's head. According to her account, this appeared during her last pregnancy in 1827, which was unattended with the birth of any child. At the autopsy an ovoid tumour was found occupying the left internal iliac fossa, measuring eighteen centimetres in length by fifteen in breadth. It had contracted adhesions with the left side of the uterus, the omentum, and with the peritoneum in Douglas's space. The uterus was well formed, as were the right tube and ovary. The left tube was identified with the anterior surface of the tumour, and admitted a small probe to the extent of twelve centimetres, when it became confounded with the adhesions of the omentum to the tumour. Of the left ovary no traces could be found. The tumour exhibited a somewhat uneven surface, owing to the deposit on its outer layer of numerous concretions (some of which were of considerable size), consisting of carbonate and phosphate of lime. A section of the tumour exhibited a fœtus at about full time,

but shrivelled up and compressed into an oviform shape. The various parts of the body were easily recognizable. This was the case also with the funis, which could be traced from the navel to a placenta about the size of the palm. The membranes still surrounded the fœtus. With these membranes the surface of the fœtus had contracted close adhesions in many places, and they, together with connective tissue with which they were closely united, constituted the outer covering of the tumour, in which the calcareous concretions were deposited. The cartilages and bones possessed their normal consistency; but all the other organs, although easily identified and separable, exhibited the presence of salts of lime, and were thus undergoing a process of calcification. Besides the lime, also fat in the molecular form existed in all the tissues, as well as a brown pigment. There were also observed in all the organs large numbers of miliary white granules, grouped together in peculiar needle-form crystals, the chemical examination of which failed to prove their composition.—*Med. Times and Gaz.*, Jan. 20, 1877.

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Knots in the Umbilical Cord.

In *L'Union Médicale*, Oct. 1876, Dr. E. Géry remarks that although many writers on this subject have considered it of little importance if a knot be formed in the cord, he himself does not consider it so unimportant. He relates two cases of death of the fœtus caused by this accident. In the first case, the mother felt the fœtal movements cease at seven and a half months. Labour supervened at term, when a dead child was born presenting signs of intra-uterine death of about a month's standing, and having a tight knot in the cord. In the second case the mother was quite well, and felt the fœtal movements at the usual period. Dr. Géry saw her at the sixth month on account of some œdema of the ankles, and then heard distinctly the fœtal heart. She was delivered at the seventh month of a dead female child, with a knot in the cord. It had apparently been dead about a week. Dr. Géry feels sure that in both cases death was the result of arrested circulation in the knot in the cord.—*London Med. Record*, Jan. 15, 1877.

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The Length of the Frœnum of the Tongue.

M. Bailly (*Journal des Sages-femmes*) remarks that, instead of the condition known as tongue-tie preventing the child from sucking, it aids it in the performance of that function. It is but a vulgar error to suppose that tongue-tie is the cause of the child being unable to seize the teat. On the contrary, M. Bailly has seen a case where the tongue was perfectly free, unbridled by a frænum. The child in this case was unable to take the breast, but had to be fed by the bottle, because its long unbridled tongue was glued to the roof of its mouth. The child was unable to depress the tongue, and seize the nipple.—*London Med. Record*, Jan. 15, 1877.

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On a Case of Perforation of the Bladder by a Pessary.

At a recent meeting of the *Société de Chirurgie* of Paris (*Journal de Médecine et de Chirurgie pratiques*, Dec. 1876), M. Notta, of Lisieux, narrated the case of a woman who for a long time had worn a winged pessary for a procidentia of the cervix. After an effort she suddenly felt a violent pain in the belly, and lost the power of holding her urine. It was then perceived that one of the wings of the pessary had penetrated the bladder; the wound contracted a little, but it became necessary to perform the operation for fistula. This case shows that pessaries may be dangerous; M. Notta knew a case in which a pessary ordered by a quack caused abscesses and fistula, and another in which death was the result of its untimely use.—*London Med. Record*, Jan. 15, 1877.

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THE MONTHLY ABSTRACT

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Anatomy and Physiology.

The Muscles of the Perineum.

A valuable paper, containing the results of numerous careful dissections of the perineum, appears in the last number of M. Charles Robin's *Journal de l'Anatomie*, by M. CADIAT. He observes that the descriptions given by various writers of the so-called muscles of Wilson and Guthrie, and of the external and internal sphincters of the bladder, are very discrepant and confused, which arises, in part at least, from the circumstance that the striped and unstriated muscles were run into one another, and are distinguished with difficulty by coarse dissection. To overcome this difficulty M. Cadiat has adopted a plan he employed when working in conjunction with M. Robin on mucous membranes, and which consists in making microscopic sections of the perineum of new-born infants. He has thus been able to obtain longitudinal sections of the urethra from the bladder to the root of the penis and extending backwards to the anus, and by superimposing these several sections ideally, he has acquired a very accurate conception of the position and attachments of the structures in question. Speaking broadly, he has arrived at the somewhat startling results that there is nothing corresponding precisely to either Wilson's or Guthrie's muscles, and that all the muscular fibres included under these names may properly be termed constrictors of the urethra, and are disposed in a very simple manner, which he proceeds to describe as follows.

The sphincter apparatus of the urethra forms a kind of muscular funnel, which is directly continuous with the circular fibres of the bladder and extends as far as the bulb. At certain points, however, it is modified partly by the interposition of the prostate and bulb itself, and partly in consequence of striated fibres taking the place of smooth muscular tissue. He does not admit that, external to this circular layer, there are any extrinsic muscles extending from the urethra to adjoining parts, corresponding to the muscular bands named after Wilson and Guthrie, though we believe the credit of describing the latter set should be assigned rather to Mr. Hancock than to Mr. Guthrie. As might be expected, the circular fibres which surround that portion of the urethra which is in immediate contiguity to the bladder are composed of unstriated muscular fibres, but in the membranous portion these are replaced by striated fibres, and it is to particular parts of this striated annulus that the above special names have been given. In the female there is nothing more, the parts being reduced to their greatest simplicity, but in the male the presence of the prostate gland interferes with this simplicity. The inferior part is first observed to be broken up by the interposition of large arteries for the supply of the bulb (the veins occupying a lateral position). A little further on, the erectile tissue itself is found between the muscular fibres. On still following the inferior wall of the urethra, a point is arrived at where it is no longer completely invested by muscular tissue. This is only found on the upper wall, where it appears in transverse sections in the form of the gable end of a house, and it is this part which has received the name of Wilson's muscle. It thus appears that the urethra, from the neck of the bladder to the bulb, is embraced by a cylinder of muscular fibres, part of which are striated and part smooth; in many parts these elements

are intermingled. The smooth fibres occupy the upper part and the neck of the bladder, and the prostate is intercalated between them. In the female, owing to the absence of this gland, the muscular cylinder is continuous. The striated fibres form a kind of case, bevelled off at the two extremities. These two extremities are on the upper part of the urethra, the floor of the urethra presenting very few striated fibres. This muscular case posteriorly invests part of the superior surface of the prostate, whilst anteriorly it projects slightly beyond the plane of the triangular ligament.

In the perineum, and between the sphincter urethræ and sphincter ani, there is a kind of muscular band, the fibres of which run in a transverse direction. These fibres are inserted into the median raphé, and externally into the cellular fasciculi belonging to the connective tissue of the pelvis, or of the subcutaneous layer, according to the depth at which they lie, and some form what is termed the deep transverse muscle, whilst others form the superficial transverse muscle, and yet others belong to the bulbo-cavernosus. M. Cadiat is careful to point out that none of these fibres are capable of effecting an arrest of the venous circulation of the penis, and certainly do not, as was once supposed, aid in producing erection.—*Lancet*, March 3, 1877.

Materia Medica and Therapeutics.

Bromide of Camphor.

This drug, which is camphor in which one atom of hydrogen is replaced by one atom of bromine ($C_{10}H_{15}BrO$), and which has of late been largely used in the Paris hospitals by Charcot, Vulpian, Bourneville, and others in the treatment of nervous diseases, with seemingly good results, has also been investigated by Dr. O. Berger, of Breslau, in a considerable number of cases (*Berl. Klin. Wochenschrift*, No. 4, 1877), but his results are scarcely so satisfactory as those which have been reported in France. Briefly stated, he found that, even in doses of one to one and a half gramme, bromide of camphor has scarcely any hypnotic action. In twelve cases of neuralgia its use produced very little improvement. In six cases of delirium tremens the patients were not quieted by doses gradually increased up to from one-half to one gramme every hour, whereas the use of chloral hydrate produced rapid improvement. A short experience of its use in epilepsy, in doses of from one-tenth to three-fifths of a gramme three or four times a day, was unfavourable to it, though Bourneville has reported good results in epileptic vertigo. Dr. Berger found bromide of camphor most efficacious in the purely nervous form of palpitation of the heart, and in irritation of the urinary and generative organs. In its administration in large doses, he recommends that the patient's temperature should be frequently taken, and that the drug should be at once omitted if the thermometer indicates a fall below the normal height. This advice is founded on the experiments of Bourneville, Pathault, and especially of Lawson, all of whom agree that bromide of camphor reduces the temperature of the body; while the latter has shown that in the case of poisonous doses this reduction is very considerable.—*Med. Times and Gaz.*, March 10, 1877.

On the Action of Carbonic Acid on Bone.

In a paper by Dr. H. Tillmanns, of Leipsig, in a recent number of the *Deutsche Zeitschrift für Chirurgie*, Bd. vii., allusion is made at the commencement to some investigations by Fleisch proving that carbonic acid, after prolonged contact with dead bone, causes dissolution of all the elements, organic as well as inorganic, of the bone-tissue. In the dissolution of bone by the mineral acids, the calcareous elements only are dissolved, the protein elements

being left intact. Dr. Tillmanns holds that to this action of carbonic acid is due the partial destruction of ivory pegs used in the treatment of pseudarthrosis, this destruction of the ivory being the result of removal both of its organic and inorganic constituents. Against the theory that the pressure of granulations causes this absorption of the ivory, he argues, that, though such pressure, and indeed pressure from any cause, may produce rapid removal of living bone, it does not, as has often been proved by experimentation, exert any action on bone that is not living. The roughening of the surface of the ivory peg cannot be attributed to the action of any mineral acid, since this roughening and disintegration of the ivory structure is due to the removal of organic as well as earthy constituents. Some authors attribute the breaking down of the ivory to the action of lactic acid, but Dr. Tillmanns says that there is not sufficient of this substance in the human organism to effect such change. A description is given of some experiments made by the author, which show that ivory pegs, when submitted without the organism to the action of carbonic acid, at a temperature of 100 deg. Fahr., become roughened on their surfaces through the dissolution and removal of both organic and inorganic elements. Dr. Tillmanns holds that the carbonic acid causing the partial removal of ivory pegs used in cases of pseudarthrosis, is given off by the blood. In the course of such treatment, the conditions for the giving off of carbonic acid are very favourable. The whole of the false joint, in consequence of the presence of the foreign bodies, is in an inflammatory condition, and very active processes of nutrition and tissue-change are carried on in the richly cellular and vascular structures about the seat of the lesion. Why a sequestrum is so seldom roughened or changed in any way during a more or less prolonged sojourn in the organism is due to the fact, Dr. Tillmanns considers, that the portion of necrosed bone is removed from the contact of living tissues, and generally surrounded by pus, so that the direct action of carbonic acid is prevented.—*Lond. Med. Record*, March 15, 1877.

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On the Value of Salicylic Acid in Disease.

In the wards of Professor Wunderlich, in Leipsic, salicylic acid was administered in nearly two hundred cases during the years 1875 and 1876. From careful study of its action in this large number of cases Dr. Balz, formerly first assistant at the Medical Clinic, has deduced the following conclusions (*Archiv der Heilkunde*, 1877): Salicylic acid deserves, as a rule, the preference over all other antipyretics, but it fails in certain cases, in which other remedies produce valuable results. Cold water and quinine still retain possession of their therapeutic domain, in which the new remedy cannot rival them. Apart from its antipyretic action, it increases the excretions from the skin and the kidneys, and may, in consequence of this power, prove useful in the treatment of some cases of dropsy. The unpleasant nervous symptoms, such as tinnitus aurium, deafness, delirium, and mania, which sometimes supervene during its employment, usually disappear spontaneously, and are not dangerous.—*Lond. Med. Record*, March 15, 1877.

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On the Use of Opium in Tonic Medication.

Dr. Renault (*Thèse de Paris*, August, 1876), following the teaching of Professor Gubler, and from cases studied in his wards, insists on the value which opium may have as a tonic medication, especially in persons habituated to its use. His conclusions are that opium is suitable in the forms of asthenic and anæmic cephalalgia, and in neuralgia of the same origin, but that it does not succeed in the hyperasthenic and congestive forms, in which it is rather injurious than useful. He makes the same remark on the subject of the delirium which is observed in pneumonia, typhoid fever, erysipelas, etc., if this morbid system be due to ischæmia, and not to an inflammation of the meninges and of the cerebral substance.

In chlorosis and anæmia, the cerebral symptoms are advantageously combated by small doses of opium, which, besides re-animating the functions, give,

so to speak, a stimulus to the organism. Opium will calm the pains of chronic maladies, will raise the exhausted strength, or at least, will put the organism in a state to oppose a longer resistance. The pulse is thread-like; the pupils are dilated; morphia is administered, and immediately the circulation is strengthened. Morphia, all agree, congests the brain; the congestion of the brain brings to an anæmic person just the quantity of blood indispensable to a regular fulfilment of functions. From that moment the cyanosis disappears, the pupil contracts, the pulse rises under the finger. This observation may be made in a consumptive patient and equally so in a convalescent, and in an individual anæmic from hemorrhage.

M. Vibert has shown the admirable results which may be accomplished by morphia. Morphia drives to the brain all that remains of blood in the individual. It acts like the elastic compression practised on the limbs and proposed by some for patients in child-bed who have lost their blood from hemorrhage. Insanity itself may in certain cases be successfully treated by opium, but it must not be of the irritative kind; an opiate treatment will be so much the more indicated if there be symptoms of cerebral ischæmia.

M. THAON insists also, for his part, on the tonic influence of morphia in patients with advanced consumption. He shows that in the latter there exists a deficiency of red corpuscles, which deprives the brain of its natural stimulant. The brain can no longer command the organs; the regulator of the machine is suppressed; consequently the functions suffer, and the consumptive patient becomes suffocated and cyanosed.—*London Med. Record*, March 15, 1877.

Antiseptic Method as applied to Amputations and the Removal of Tumours.

Dr. POZZI (*Progrès Médical*, 1876) says that, after a visit to Edinburgh, though convinced that there was undoubtedly something very important in Lister's antiseptic treatment, he thought that it included several unnecessary details which might with advantage be dispensed with. To test this belief, and if possible to determine what was, and what was not, absolutely necessary, he took advantage of the three months during which he had charge of Professor Broca's wards in Paris.

The author at first intended to leave off one by one the different appliances used by Mr. Lister; but on account of the limited time at his disposal, he from the first omitted what appeared to him the most inconvenient and least important. Hence he performed his operations without the use of the spray, and instead of the antiseptic gauze used carbolized cotton-wool or charpie, and afterwards permeable carbolized cotton-wool, which combines the qualities of carbolized cotton-wool and charpie. Further, instead of protective, he used Hamilton's goldbeater's leaf; for the Macintosh, ordinary oiled-silk; and kept the pads and dressings in their position by ordinary bandages.

During the operations, everything recommended by Mr. Lister was, with the exception of the spray, carefully attended to, and the wounded surfaces were kept in apposition by the use of superficial and deep sutures, this being considered by the author to be of very great importance.

The following is a list of the cases and the results:—

1. Removal of lymphadenoma of the neck; almost complete union by first intention.

2. Amputation of the leg at the seat of election for caries of the tarsal bones; union by first intention.

3. Excision of a triangular piece of the lower jaw in front of the masseter for ankylosis of the temporo-maxillary articulation; union by first intention.

4. Removal of a large sarcomatous breast; almost complete primary union, notwithstanding a sharp attack of erysipelas.

5. Removal of the left labium for sarcoma; primary union of deep part of the wound.

6. Disarticulation of the last phalanx of the right index finger; union by first intention.

7. Disarticulation of the thumb, with removal of the head of its metacarpal bone; union by first intention.

The author does not consider the above cases of sufficient importance or sufficiently numerous to lead to any very definite conclusions; but he ventures to think that the results obtained by the modified antiseptic treatment above mentioned are as satisfactory as could have been obtained by Lister's method when carried out to its full extent. The author further believes that the advantages obtained by Lister's method when used for such cases as those above mentioned, are the result of. (1) The methodical bringing together of the wounds by superficial and deep silver wire sutures; (2) The use of drainage-tubes; (3) Of much less importance, the protection from atmospheric influences, which may be secured by light porous dressings; (4) The application of antiseptic lotions; (5) The use of carbolized catgut ligatures, instead of the ordinary irritating catgut; (6) The employment of readily permeable dressings which prevent the accumulation of irritating fluids on the surface of the wound.—*London Med. Record*, March 15, 1877.

Medicine.

Medullary Leukæmia.

The subject of leukæmia has recently been before some of our societies; and as it is one of very great interest, it may not be amiss to give a sketch of a most important and interesting case narrated in the *Berliner Klin. Wochenschrift*. It is the more important inasmuch as it was diagnosed as a case of medullary leukæmia during life. The patient, a ship's captain, aged forty-five, was admitted into the Hospital at Griefswald on July 19, 1876, complaining of pain in the chest and oppression in the epigastrium, increased by breathing, coughing, and stooping. The only diseases he had ever suffered from were pneumonia and intestinal catarrh; he had never had syphilis or ague. The commencement of his illness dated from a severe chill in the winter of 1867-68; since that time he had always suffered from cold feet and from a feeling of internal heat, as well as from pain in the chest along the sternum when working hard, which sometimes had been so violent as to force him to give up his work. He also noticed that if he touched certain parts of his sternum in putting on his shirt, or struck them with a button, he felt shooting pains at those spots. Somewhat later he noticed that his left leg was stiff in walking. On one point he is very decided—namely, that the pains in his bones preceded the uneasiness in the left hypochondriac region and the sense of pressure in the epigastrium by several years. Present state on admission: "In the last two years he has gradually lost flesh and strength, but is still a tolerably powerful man, with good muscles and without any distinct external signs of anæmia. His appetite is good, and he has no fever. The only lymphatic glands which are swollen are the inguinal glands, some of which are as large as a pigeon's egg; they are not tender. The spleen is much enlarged, reaching, when the patient lies on his back, forwards to the umbilicus, and downwards into the iliac fossa, and partly into the true pelvis. The abdomen is not painful; the liver-dulness measures sixty centimetres in the nipple line. The lungs are healthy. There is slight increase of the heart's dulness, especially towards the left side, and the apex-beat is a little too far out. Heart's sounds clear. Pulse 80. The urine is normal in quantity, acid, and contains no albumen, but a small quantity of bile-pigment. His most important symptom is *the painfulness of the sternum*, which, though always present, is much increased by pressure, and especially by percussion. The sternum is more prominent than usual. The manubrium makes rather a sharp angle with the body of the bone, and two circumscribed spots can be made out on it, where there is a shallow depression in the bone; and these are intensely painful even on moderate pressure. To the finger the larger of these spots has a soft elastic feel. There is a sensation as if one were

pressing the finger into a sharp-edged opening in the bone. The heads of the ribs, especially of those from the second to the sixth, are also swollen and painful on pressure. The patient complains too of tenderness on pressure over a spot corresponding to the left posterior-superior iliac spine, and also of pain on pressure and movement in the left trochanter, which, on careful examination, appears to be somewhat broader than the right. Some blood taken from the little finger of the left hand resembles chocolate made with milk. There is an enormous increase in the number of white blood-corpuscles, their proportion to the red being about as one to five; and they exhibit extraordinary variations in size, the smallest being about one-third smaller than the red, the largest twice or even four times as large as the red, the large cells predominating."

The tenderness of the bones, as well as their alteration in size and consistency at certain parts, and especially the fact that the blood contained numbers of white cells similar to those which occur in abundance in the so-called red marrow of the bones, and but sparingly in the spleen, led Prof. Mosler to the diagnosis of medullary leukæmia complicated with splenic, and with a slight degree of lymphatic, leukæmia; and his diagnosis appears to be completely confirmed by the following considerations: In the first place, while the patient was under observation a distinct increase took place in the sternal portions of the fifth, sixth, seventh, and eighth ribs, so that on inspection those parts resembled prominent tumours. The actual increase in size of each individual rib was about three to four centimetres. The altered ribs were painful on pressure, and had an elastic feel. These changes occurred in a period not exceeding three or four weeks. In the second place, on October 13, 1876 (the day before the patient left the hospital), the sternum was explored, at the part where it appeared most altered, with a Middeldorpf's harpoon. The instrument easily penetrated through the softened bone, and could be moved about, as it were, within a cavity. When withdrawn it brought with it a substance tinged with blood, which was found microscopically to be made up of large quantities of the same large white blood-corpuscles as those in the patient's blood, mixed with a much smaller number of red corpuscles and some fat-drops. There are some interesting points connected with the treatment of this case which we may briefly summarize. In the first place, Professor Mosler tried the effect of transfusion of 210 grammes of defibrinated human blood, on July 24, into the patient's left radial artery, while at the same time 200 grammes of the patient's own leukæmic blood were allowed to escape from his right median vein. The operation itself succeeded, but any ultimate value of the transfusion seems to have been compensated for by the *tendency to bleed*, which both wounds, and especially that over the radial artery, exhibited; in fact, the patient lost altogether about 400 cubic centimetres of blood in this way. On the other hand, two cases of splenic leukæmia in which Professor Mosler performed transfusion were considerably benefited by it. The other plans of treatment adopted in the above case were—(1) faradization of the region of the spleen, continued for many weeks in sittings of from fifteen to twenty minutes twice a day; and (2) the internal administration of pills containing piperine, oil of eucalyptus, and hydrochlorate of quinine, according to the following formula: Piperinæ grammes v, ol. eucalypti grs. iv, quiniæ hydrochlor. grs. ij, ceræ albæ grs. vj—divide into 100 pills, three to be taken thrice a day. With regard to (1), Professor Mosler, although carefully following the instructions of Botkin in his work on the Contractility of the Spleen (*vide Medical Times and Gaz.*, March 18, 1876, page 318), was unable to detect either a diminution in the size of the spleen, or any enlargement of the liver, or any decided increase in the amount of white blood-corpuscles in the blood. The composition of the pills (2) which the patient took depends on the following considerations: The oil of eucalyptus globulus can, like quinine, cause contraction of the normal spleen. This has been proved by Mosler, Mees, and Schläger; and, further, it has been found to have a curative effect in intermittent fever, although large doses (even four to five grammes) of it may be necessary to produce a decided effect; and in certain cases its influence over the fever was less marked than its power of causing contraction of the spleen. In any case it is far inferior

to quinine, which Professor Mosler (who is an authority on diseases of the spleen) is firmly convinced to be still, as ever, *the* remedy *par excellence* for them. The high price of quinine, however, is a great objection to its continued use for a long period, and it is for this reason that such cheaper remedies as eucalyptus oil and piperine are deserving of more extended trial. *Piperine* is an alkaloid which is most readily extracted from white pepper. When pure it has scarcely any taste. It is only slightly soluble in boiling water, and only in the proportion of one to thirty in cold alcohol, but it is more soluble in volatile oils and in chloroform and benzine. In the above-mentioned pills it is dissolved in the eucalyptus oil. Experiments made on dogs by Professor Mosler, in conjunction with Dr. Soenderop, have shown that piperine causes distinct contraction of the spleen, and also a slight fall of the temperature of the body. In the healthy human subject, however, with doses of from one-half to two grammes, the greatest fall of temperature did not exceed 0.4° C. Gramme doses cause no unpleasant effect; one and a half to two grammes cause digestive derangement, loss of appetite, griping, etc.; but it is possible that, as in the case of other antipyretic drugs, febrile patients might be able to take a larger dose of it without ill effect than healthy persons. Whatever the individual value of these remedies may be, there can be no doubt that the patient was benefited by their combination. Between July 19th and October 12th, 1876, he had taken altogether 414 pills; his general appearance was much improved, the sense of weakness and weariness which he had earlier suffered from was much diminished, and he was neither losing nor gaining weight. Although the sternum was still painful and tender, the liver and spleen were both much reduced in size, and the proportion of white blood-corpuscles to red in the specimen of his blood was now only as one to nine. On November 4th the patient, who had been at his home in the country, and who had still continued the pills during this period, was exhibited to the Medical Society of Greifswald, and appeared to be still further improved. Professor Mosler does not touch upon the question of the treatment of leukæmia by phosphorus in his long and interesting paper, to which those who wish to see what advance our pathological and anatomical knowledge of the form of leukæmia which originates in the marrow of the bones, and which was discovered by Dr. E. Neumann in 1869, has made in a short time, cannot do better than refer.—*Med. Times and Gaz.*, March 3, 1877.

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Some Observations on Scarlet Fever.

Dr. Henoch brought forward for discussion, at a late meeting of the Medical Society of Berlin (*Lond. Med. Record*, March 15, 1877), some points regarding scarlet fever, *à propos* of the prevailing epidemic. There was a great tendency to connect malignity of the disease entirely with high temperature; but this view was only partially correct, with regard especially to the sensorial phenomena, since these frequently appeared in a very threatening form from the beginning, and were frequently entirely absent in other diseases attended with a great and long-continued increase of temperature, such as typhus. In most cases, the cause of the malignity was rather to be ascribed to the specific action of the scarlatinal poison, which affected the nervous system, and along with it the heart. Albuminuria was, probably, in many cases the result of venous stasis in the kidneys arising from weakness of the heart. The scarlatinal poison had, also, a remarkable tendency to produce necrotising (so-called diphtheritic) inflammations on certain mucous surfaces. These inflammations must be distinguished from the so-called diphtheria, which depended on a specific infection, and might occasionally occur in combination with scarlatina, especially in hospitals. In order to avoid misconception, Dr. Henoch was in favour of denoting so-called diphtheria by another name, such as *synanche contagiosa*, suggested by Senator. An unfavourable prognostic symptom, of not unfrequent occurrence, in severe cases of scarlet fever, was obstinate diarrhœa, which was found, on *post-mortem* examination, not to depend on intestinal catarrh, but on swelling of the Peyerian and solitary glands. As regarded treatment in cases attended with high temperature, the apparently malignant

symptoms were to be met by antipyretic remedies; but he would warn against the excessive use of cool or cold baths, the results of which were by no means satisfactory. Collapse occurred much more readily in this disease than in typhus. He preferred lukewarm baths, at a temperature of 25 or 26 Reaumur (88.25 or 90 Fahr.). The use of antipyretic remedies, especially salicylic acid, also demanded great caution, on account of the liability to collapse. In the specially malignant cases, treatment was absolutely powerless after a certain degree of infection had been reached. In cases of moderate severity abundant quantities of wine and coffee, and camphor, were useful. Camphor was best administered subcutaneously in cases attended with severe dysphagia; its stimulant action being increased by solution in spirit of wine, which, however, should be diluted with an equal part of water to avoid inflammation and sloughing of the skin. There was great variety in the opinions as to the anatomical conditions of the affection of the kidneys. The amount of blood in the urine also varied much. Both the so-called hemorrhagic and the non-hemorrhagic forms of scarlatina might pass through their course without fever or any complication. The treatment in both forms was nearly the same. Purgatives were first to be given unless diarrhœa were already present; then acetate of potash, with which Dr. Henoch generally gave Wildungen water. Under this treatment many cases run a favourable course in from eight to fourteen days; otherwise the use of astringents was now commenced, especially ergotin or tannin, and later, liquor ferri sesquichloridi, which latter medicine was also useful in the after-treatment. Dr. Henoch regarded warm baths as of very doubtful value; he had not yet used the hot steam-bath. In the course of nephritis, symptoms of cardiac weakness often appeared, slowness or irregularity of the pulse, without special symptoms of uræmia. In a case of this kind Dr. Henoch had observed a systolic murmur at the apex of the heart, lasting, however, for one day only.—Dr. Nathanson referred to the concurrence of epidemics of scarlatina and puerperal fever. He had observed epidemics of both diseases prevailing together at their height, and had also found that during a scarlatinal epidemic parturient women were especially liable to puerperal fever. Both diseases had certain symptoms in common, such as the unusual frequency of pulse, and tendency to necrotic processes.—Dr. Wiss said that the acute exanthemata generally occurred in a more severe form in the United States than in Europe. This was stated during the Congress in Philadelphia, and agreed with his observation during thirteen years' practice in America. The malignant form of scarlatina, known as "typhoid," was frequently met with; it usually ran its course without inflammation and sloughing of the neck. In these cases, infusion of cinchona was given in the early stages with the best results. As a remedy for the dropsy, digitalis and juniper-berries were useful.—Dr. A. Baginsky agreed with Dr. Henoch as to the influence of high temperature in scarlet fever. High temperatures were injurious only when they acted long and continuously on the organism: hence the generally slight importance of the hot stage of intermittent fever. The cases of malignant scarlatina in children, who frequently, after vomiting once, sank into a state of somnolence or complete unconsciousness, and died, gave the impression of a deadly poisoning. He could not agree with Dr. Henoch that the scarlatinal poison acted with special intensity on the heart. The assemblage of symptoms of paralysis of the heart was not complete in children. There were, indeed, cases in which the pulse was quick and the arterial tension much lowered; but there were also others in which, though the tension appeared good, the children gradually sank. In the second place, the pathognomonic sign of fatal cardiac weakness was wanting; namely, absence of the second sound, which was a striking symptom in cholera. Again, notwithstanding the extreme impairment of the heart's action, the sensorium was but slightly implicated in cholera, even up to the last breath; while in scarlatina the intense implication of the sensorium came prominently into the foreground. On the whole, Dr. Baginsky would hesitate to admit that the scarlatinal poison acted specially on the heart; he believed rather that it acted through the blood on all the organs, and not least on the nervous system. On looking at the history of epidemics of scarlet fever, it would be seen that two courses had been fol-

lowed in the treatment. One group of physicians treated scarlet fever antiphlogistically with mild cooling remedies, while another considered the early use of stimulants necessary. Historical evidence showed that the former distinctly had the better results; and they went so far as to assert that the malignity of scarlatina was called into act by the stimulant treatment. While this must be regarded as an exaggeration, it could not be denied that a mildly cooling, not too energetic treatment—the Hippocratic method of treating scarlet fever as followed since the time of Sydenham—was the most successful. Dr. Baginsky attached much importance to treatment through the skin, the principal organ by which the scarlatinal poison was eliminated. In children, he used from the first baths; varying the temperature somewhat according to the body-heat, but never specially endeavouring to obtain an energetic antifebrile action. The temperature which he used was never lower than 22 or 23 Reaumur (81.8 to 82.4 Fahr.). After the bath, the children were enveloped in a linen cloth, allowed to lie down lightly covered, and, after about an hour, rubbed with bacon over the whole body. This method of treatment, which was, indeed, not new, but was a combination of the lukewarm bath with Schneeman's bacon inunction, effected everything that could be done with regard to the skin. The result was the saving of a large number of cases of petechial scarlatina in which, he was convinced, death would otherwise have occurred. He did not profess to have thus cut short the course of malignant scarlet fever, or to have entirely averted malignant complications, for these occurred in some cases in spite of all the diligence with which the cutaneous treatment was carried out; but, on the whole, he was convinced that the course of the disease had been rendered more favourable, and the mortality less, than before. One result of this treatment was the prevention of protracted desquamation; the only indication of this was some roughness of the skin, with, in many cases, branny scales; large masses of epidermis were never thrown off. He had also found, that when baths, at a temperature of 27 or 28 Reaumur (92.75 to 95 Fahr.), were used, after the reduction of the fever, the dropsy was not so severe as in previous cases, notwithstanding the occurrence of albuminuria. If, in the further course of the case, slight cutaneous transpiration were allowed after the use of the bath, and the child's body were then dried and rubbed with bacon, there was generally slight œdema, and the secretion of a little fluid in the cavities of the body, but never actual dropsy. Dr. Baginsky had never seen any result from the bath in cases of nephritis; but he had not found it to act injuriously. Tannic acid he regarded as a dangerous remedy in some cases, especially in the early stage; he had often seen intense hæmaturia follow its use. Diuretics were useful at a certain point in scarlet fever, but it was difficult to determine the right time for their administration. If the urine were scanty, but fairly clear, containing much albumen with an abundance of fatty granules, and only a few red corpuscles, and if the child were pale and there was considerable œdema, the cautious use of diuretics was indicated. Dr. Baginsky had become convinced of their utility by a case in which inunction and baths failed to give relief, while under the use of juniper berries—taken in Dr. Baginsky's absence, and against his orders—the urine became abundant and the œdema rapidly disappeared. He regarded icterus as one of the most unfavourable complications of scarlet fever, especially when nephritis was already present. When it was remembered that Nothnagel had found cylinders in the urine in icterus, and that the elimination of pigment by the kidneys must disturb the circulation in them and the secretion of urine, it would be easily perceived that the combination of nephritis and icterus must be very injurious. In a case of this kind, he had seen absolute suppression of urine for three days, and was at last obliged to use diuretics (juniper berries). The child recovered; the symptoms of uræmia were but slight.—Dr. Senator asked what observations Dr. Henoch had made on the treatment of the throat-affection in scarlet fever. It seemed to him that the confusion in the writings of various authors as to the use of local treatment, depended in part on the fact that, as Dr. Henoch had stated, the throat-affection in scarlatina had been regarded as the same with that which he called synanche. In the latter, however, the tendency of the disease was to extend to the larynx; while, accord-

ing to Dr. Henoch, this very rarely occurred in scarlet fever. In the former, he was opposed to the use of all energetic stimulants or caustic treatment. As regarded the nephritis, he had used acetate of potash with or without digitalis, in the earliest stages, with benefit. The action of the acetate was partly to be explained by its change within the body into carbonate of the alkali, which rendered the urine neutral or alkaline, so that it dissolved out the cylinders of albumen and discharged epithelium, which blocked up the uriniferous tubules. He had repeatedly seen such remarkably good effects from the use of warm and hot baths, even when uræmia had set in, that he could not abandon their use.—Dr. Henoch said that he had spoken of stimulant treatment only in malignant cases. In the throat affection of scarlet fever, as well as in diphtheria or synanche, he used inhalations or irrigations of a two-per-cent solution of carbolic acid or similar remedies. He did not regard scarlet fever and puerperal fever as interchangeable. The greater disposition of lying-in women to scarlet fever was to be attributed to the presence of the uterine wound. An otherwise healthy lying-in woman got scarlet fever during an epidemic of the disease, but not puerperal fever.—Dr. Nathanson could not agree with the last observation, as in his experience, during an epidemic of scarlet fever, most of the lying-in women had puerperal fever.—Dr. Von Langenbeck asked whether gangrene was often observed in scarlet fever. He had met with three cases. In one, which he saw in Kiel, there was gangrene of the ends of the fingers, and death occurred in twenty-four hours; in the second, mortification of the top of the nose was said to have followed scarlet fever; and the third case was seen by him with Schönlein, in a boy aged 10, in whom, after an ordinary attack of scarlatina, gangrene of the eye-lids and feet suddenly appeared; Schönlein had not seen a similar case.—Dr. Henoch had seen one case of bed-sores and one of gangrene of the alæ nasi; both recovered.—Dr. Seligsohn had, in 1868, seen a case of perforation of the hard palate after scarlatina. Dr. Wilms, who saw the patient with him, told him that he had met with a similar case a short time previously.—Dr. Simon had seen a case of sloughing of the scrotum after scarlatina; it ended in recovery.

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Treatment of Yellow Fever.

In an interesting paper founded on the study of the Charleston epidemic of 1872, Dr. F. Peyre Porcher, Professor of Clinical Medicine in the Medical College of the State of South Carolina (*Charleston Med. Journal*, Jan. 1877), makes the point that yellow fever and its companion "break-bone" can be treated successfully if it *is begun* early—the first half hour if possible—with a single mercurial purge (to which he invariably adds quinia as an additional antipyretic) followed by *salines*, and the early, assiduous, and repeated sponging of the head, arms, and hands with ice-cold water to reduce and keep down the temperature; with the use also, at the beginning of the fever, of mustard sinapisms and foot-baths. The only subsequent treatment consists in the enjoining of rest and quiet, and the employment of a mild alkaline mixture with a little morphia, with nourishment carefully administered. He suggests that a little tincture of aconite might be beneficially added to the mixture.

"By this treatment (all parts of which are *essential*) in *fair cases* seen at the beginning of attacks, the recoveries should scarcely fall below ninety or ninety-five per cent. But cold water and revulsives of mustard to the abdomen and extremities must be used early and thoroughly to insure success. The disease, by these means, is not permitted to become too severe, and black vomit and other *results of high temperature* can never occur if the temperature is not permitted to rise. I leave the record to be examined to prove this, and make no apology for the minuteness of detail of each case. If it is urged that many of the cases that fell to my lot to treat seem mild, I answer that I kept them so by unusual care in carrying out the measures; but many of them occurred to entire strangers who were unacclimated, and I felt the greatest anxiety about them all, knowing how easily cases of yellow fever, apparently mild, become dangerous if neglected. Drunkards, scrofulous, broken-down subjects, and those who at the beginning have been managed in a temporizing

way, the internal heat being allowed to remain unsubdued, are necessarily beyond the reach of art. Of the three fatal cases, one died of black vomit, occurring at the moment I was called, and both of the others were men of very dissipated habits; a high death-rate in such persons will of course throw no discredit upon a mode of management by which every fair case recovers. I coincide fully with Trousseau in his expressions of contempt for mere figures and unanalyzed statistics, which only mislead by a vain show of accuracy. There was one recovery after black vomit—case 15. As I had before observed, all cases appear to be ushered in with costiveness."

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Mechanical Treatment of Rheumatic Fever.

An article by Dr. FRANZ RIEGEL, of Cologne (*Archiv für Klin. Medicin.*, Heft. v., s. 563–90), in which, *inter alia*, a *résumé* is given of all the chief therapeutic methods which have been proposed of late years for the cure of acute rheumatism (and their name is legion), is interesting for its advocacy of a method from which internal remedies are entirely excluded—namely, the fixation of the rheumatic joints by means of splints. This method was first recommended by Seutin and Gottschalk in 1845, and more recently Concati and Tamburini (*Rivista Clin. di Bologna*, 1872), and in Germany Heubner (*Archiv der Heilkunde*, 1871), and Oehme (*Archiv der Heilkunde*, 1873) have spoken strongly in its favour, as giving the best results of any treatment in acute rheumatism. Heubner's verdict was to the effect (1) that the pains were less severe than under any other system, (2) that the fever abated earlier, and (3) that the sweats were undoubtedly less annoying than under other kinds of treatment. Dr. Riegel's experience is founded on forty-one cases of acute rheumatism with multiple joint affection which he treated consecutively in the Municipal Hospital at Cologne. It should be specially remarked that the splints were only applied, as a rule, to those joints which were most swollen and most painful; the other joints were either simply wrapped in cotton-wool, or had some narcotic liniment applied to them. No medicine was given internally. The apparatus used consisted of pasteboard splints thickly lined with cotton-wool, and attached in the ordinary way by means of straps or bandages. Each joint had two pasteboard splints applied to it; those for the knee, for example, being thirty-six centimetres long, and about sixteen centimetres broad, with a piece cut out in the middle of both, so as to adapt them better to the form of the joint, the knee being kept in an extended position. Before application the pasteboard was always wetted, to make it fit better. Dr. Riegel lays the greatest stress on the lining of the splints with wadding, for the latter must always be used in *very thick layers*, so as to render the pressure as even as possible over the whole joint. As it was found very difficult to apply splints to the hip and shoulder-joints, they were only thickly covered with wadding, and fixed as far as possible with bandages. The results of this treatment were, briefly, as follows: 1. The application of the splints immediately relieved even pains which were previously most agonizing; and, as a rule, in all cases immediate relief was felt, and continued as long as the joint was bandaged. 2. It was found that the bandage must be allowed to remain on the joint, provided it is properly adapted, for several days after all the pain has completely ceased; and, if possible, it should stay on until the patient's general state, as well as temperature, have become normal. It is better to let it stay on too long than too short a time. Quite exceptionally Dr. Riegel has allowed it to remain fourteen days; on the average it remained six to seven days. 3. The effect of this treatment on the temperature was less favourable than on the pain; in scarcely any case in which the thermometer was used throughout the whole course of the disease (as it was in some cases every two hours, day and night) was a marked fall of the temperature observed as an immediate consequence of the application of the splints; but, as a rule, unless there were complications or sudden relapses, the temperature gradually fell from the moment the apparatus was applied, and continued to do so until it became completely normal. 4. The fixation of the joints appeared to have no influence in preventing

or modifying cardiac complications. In several cases the latter supervened while the joints were fixed, and after all pain had ceased. 5. The diminution of perspiration was not specially remarkable, though it seemed occasionally that the treatment exerted some slight influence over it.

It is scarcely fair to criticise a plan of treatment like the above without having had an opportunity of personally observing its various merits and demerits, but it seems *à priori* rather a cumbrous one for hospital uses, considering that it scarcely accomplishes much more than to relieve the patient's pains. We should like to know whether the application of the splints is not rather a painful operation, even though the after effects are so comforting. We are not sure that some patients would not resist much handling of their joints in a very outspoken manner, especially in private practice. When opium, however, is contra-indicated, and pain is severe, the fixation system may well receive a trial.—*Med. Times and Gazette*, March 31, 1877.

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Rheumatismal Insanity.

The following case was recently brought before the *Société Médicale des Hôpitaux* of Paris by M. Desnos (*Journal de Médicine et de Chirurgie pratiques*, February, 1877). A woman, aged 32, who had had two attacks of rheumatism, was admitted to the hospital for a third attack, which had lasted three months. After many fluctuations, this last attack, complicated by a cardaic lesion with phenomena of asystole, was especially marked in its course at the moment when the articular symptoms began to amend, by paralytic symptoms, consisting in a loss of power of motion of the limbs on the right side, accompanied with difficulty in the articulation of words, but with integrity of intellectual functions.

This paralysis, due either to embolism, hemorrhage, or even to some congestion, or some cerebral ischæmia, had completely disappeared, when there occurred an "explosion" of physical phenomena. They consisted at first in generalized delirium, somewhat incoherent, probably accompanied by hallucinations, with excessive agitation, presenting in a word the character of acute mania; then a calmer state supervened, when the delirium became marked by a tendency to ideas of persecution, accompanied by hallucinations, deep sadness, oppression, and at the same time refusal of food. During this time the articular symptoms had greatly diminished. Little by little also the psychical trouble disappeared.

M. Desnos has sought to give some nosological significance to this fact; according to him, we must not refer it to the lesion of the encephalon which had caused the paralytic complications. We must therefore attribute directly to that profound modification of the organism, whatever it be, which constitutes rheumatism, the disturbance of the understanding which was observed. By eliminating again cerebral hyperpyretic rheumatism, of which the patient did not present the etiological conditions, since her temperature was relatively little raised, it remains only to admit the existence of a rheumatismal insanity, properly so called. M. Desnos insists on the importance of establishing an exact diagnosis; for if it were caused by cerebral rheumatism, due to superelevation of temperature, the use of cold baths would be indicated, whilst in rheumatismal aberration, simple expectation, with some adjuvant remedies, should constitute all the treatment.—*London Med. Record*, March 15, 1877.

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Albuminuria as a Symptom of an Epileptic Attack.

In a paper published in vol. 59 of *Virchow's Archiv*, Dr. Huppert maintained that a transitory albuminuria occurs after every epileptic fit, whether typical or abortive. Dr. Kauer, on the other hand, examined the urine in twelve cases with more exact tests, and his results were entirely negative. In the hope of settling this disputed point, Dr. Otto, of Pforzheim (*Berliner Klin. Wochenschrift*, October 16), examined the urine after thirty-one epileptic fits, and concluded that a transitory albuminuria often, but not always,

follows the attack. He examined the urine drawn immediately after the attack, and also that drawn two hours later. His tests were heat, nitric acid, and ferrocyanide of potassium. In the urine drawn immediately after the attack, albumen was found six times, in greater or less abundance; in the urine drawn two hours later, it was found twenty-two times; in the urine drawn a third time, at a later period, no albumen was ever found. These thirty-one attacks occurred in twelve patients, and the twenty-two attacks which were followed by albuminuria occurred in seven patients. Sometimes in the same patient, albuminuria would occur after one attack, but not after another. Dr. Otto never found albumihuria after an abortive epileptic fit.

This albuminuria is undoubtedly due to the disturbance in the circulation and the blood-pressure during the attack, and consequently its duration cannot exceed that of the attack itself. The urine drawn immediately after the attack is seldom albuminous, because the urine excreted by the kidneys during the attack, which would alone contain the albumen, has not yet reached the bladder. The albuminuria is consequently of no practical importance.—*London Med. Record*, March 15, 1877.

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Spasmodic Ileus in Hysteria.

At a recent meeting of the *Société de Médecine* (*Gazette Médicale de Paris*, December 16, 1876), M. AUGUSTE VOISIN reported the case of a young hysterical girl, who had had three attacks of spasmodic contraction of the intestines, giving rise to the same symptoms as strangulation from an organic cause. The first two attacks were relieved by antispasmodics and purgatives, but the third one proved fatal. The necropsy revealed traces of a purely spasmodic stricture of the intestine. M. Voisin also related the history of a woman, who suffered from analogous symptoms, but in whom, with the exception of a certain impressionability, no trace of hysteria or of any other disease could be discovered. She complained chiefly of tympanites, which had become so extreme that it interfered a good deal with respiration; at the same time there were constipation and obstinate vomiting. This condition had lasted for several days, and was becoming more and more aggravated. The absence of any affection that could cause a mechanical or organic stricture of the intestine, led M. Voisin to suspect the existence of a simple spasm. He introduced an œsophageal catheter into the rectum, and discovered, some distance up, a stricture that he succeeded in passing; a large quantity of perfectly inodorous gas at once escaped through the catheter. This catheterization was repeated several days in succession, and the patient was completely cured.—*London Med. Record*, March 15, 1877.

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On Nervous Symptoms with Ear Disease.

Dr. J. HUGHLINGS JACKSON, in a paper read before the Harveian Society of London (*Medical Times and Gaz.*, March 24, 1877), stated that he thought it desirable to consider together the very different symptoms which are dependent on, or are associated with, ear disease. Excepting when considering Aural Vertigo, he would speak only of cases in which there was discharge from the ear, signifying diseases of the walls of the tympanic cavity, and, as it often did, disease of the temporal bone. To limit his subject still further, it was supposed that the patient had had discharge for some time before any extra-aural complications ensued; this was a simplification of the subject, as—especially in a child—it might be very difficult or impossible to tell whether there was recent acute otitis or meningitis, or both. To the aural surgeon, the condition spoken of is a disease of an important organ of sense; to those practising in general medicine and surgery, it is very often indeed bone disease, and that of an important part of the cranial wall. The defect of hearing which accompanies it is bad enough, but this is, in comparison, nothing to such graver evils as cerebral abscess and meningitis. Old ear disease often kills people, and sometimes kills them rapidly. Insurance companies know this, and

act upon it. Caries of a bone is bad; caries of a cranial bone is particularly bad; but, from its numerous important anatomical relations, caries of the temporal bone is worst of all. The author handed round the following reprint of two paragraphs from Tröltsch "On the Ear" (Roosa's translation), in which the anatomical relations of the external auditory canal and of the tympanic cavity are succinctly stated:—

"I have already called your attention to the short distance of the dura mater and the cerebrum from the upper wall of the *external* auditory canal, and also to the proximity of the transverse sinus and of the mastoid cells to the posterior wall. This proximity explains why these parts are sometimes involved in the inflammation, even when the caries is confined to the auditory canal. The anatomical relations are still more important in the cavity of the tympanum, since its lower wall or floor is frequently separated from the jugular vein only by a thin translucent layer of bone. Again, the largest artery of the head—the internal carotid, with the venous sinus surrounding it—takes its course on its anterior portion. These are separated from the cavity merely by a delicate and frequently defective bony lamella. Furthermore, its roof or upper wall, which, with the superior petrosal sinus, lies between the mucous membrane and the dura mater, is not unfrequently thinned, and even perforated; and besides, even in adults, there is usually a gap in the bone, the petro-squamosal fissure.

"The inner or labyrinth wall, finally, offers only slight resistance to the transition of the inflammation to the facial nerve; and through its two fenestræ, which are only closed by membrane, to the external ear; and then to the meatus auditorius internus, which is covered by the membranes of the brain. Close under the mastoid process, which is intimately connected to the cavity of the tympanum, is the transverse sinus, which makes up the whole of these important relations."

The list of nervous affections is (1) neuralgic pain, (2) Bell's paralysis, (3) scrofulous tumour, (4) cerebral or cerebellar abscess and meningitis, (5) pyæmia, (6) hemiplegia, (7) epilepsy or epileptiform seizures, (8) aural vertigo. Some of these can only be said to be *associated with* the ear disease. Pyæmia is not a nervous affection, but is conveniently considered along with the others for diagnostic purposes.

1. The neuralgic pain was cursorily considered; it was probably only symptomatic of an exacerbation of the tympanic disease—symptomatic in the same way as pain in the brow was of acute iritis, or pain down the nose of glaucoma. As a rule, *this* sort of pain did not precede or usher in cerebral abscess or meningitis; but, sometimes preceding paralysis of the face, it led to the diagnosis of "rheumatic" paralysis of the portio dura nerve.

2. The author had seen facial palsy with double tympanic disease—a clinical rarity, but one not standing in need of special interpretation. He made the following remarks on the one-sided facial palsy: (*a*) In no case of uncomplicated facial palsy had he ever seen any paralysis of the same side of the palate. An oblique position of the uvula is of no moment; it is common in healthy people. One-sided paralysis of the palate goes almost with paralysis of the vocal cord of the same side; it depends, the author thinks, on disease of the bulbar part of the spinal accessory nerve or of its nucleus. Were he to meet with paralysis of one side of the palate in a patient who had also Bell's paralysis, he should make the diagnosis, not that it depended on aural disease, even if there were aural disease, but of *intracranial* disease; there would be two lesions, and thus there would, if they came on slowly or at different times, be a step towards the diagnosis of the *nature* of the disease, for two such palsies would point to syphilis. (*b*) Uncomplicated facial paralysis with ear disease is not a cerebral symptom; it is not an intracranial symptom; it is scarcely an ear symptom; it is rather a bone symptom. (*c*) It is occasionally the precursor of fatal intracranial mischief, but, as a matter of fact, not often; and when so, it is independent of it—that is to say, the ear disease, by distinct processes, happens to do two entirely different things at once, or in quick succession. (*d*) It is erroneous to infer that because the process by which the palsy results is a gross one, recovery will not follow; complete recovery often

does. In this matter the author is in accord with Tröltsch and Roosa. (c) The facial palsy does not even show much extension of the tympanic disease, but only slight extension in an unfortunate direction. The nerve in one part of its course is separated from the cavity by a thin scale of bone, and sometimes (Toynbee says) lies just under the mucous membrane. The occurrence of intense pain in the head would be of infinitely worse omen than this facial palsy.

3. In some cases of chronic ear disease the author had found in the cerebrum or cerebellum a mass of tubercle, in the place, so to speak, of an abscess from ear disease. Except, perhaps, for chronicity of the cases, there was nothing to determine betwixt the symptoms of these cases and cerebral abscess. He could not say that there was any real relation; the cases spoken of were not cases of tubercular meningitis, nor was there tuberculosis of other organs. Tröltsch and Buhl have noted the occurrence of tubercular meningitis and acute general tuberculosis in cases of chronic otorrhœa, and they believe there is a connection between the two things.

4. The author placed together abscess and meningitis, because, since the symptoms of abscess were often very acute, he did not know how to tell whether there was meningitis or abscess in many cases of acute cerebral disease occurring with ear disease. If an attempt were made at diagnosis, the prediction of abscess, since (at least in the author's experience) it is most common, would mostly be verified. Perhaps the very early occurrence of optic neuritis, were the appearance well marked, would point to abscess. It was thoroughly well known that a cerebral or cerebellar abscess may be "latent;" as Wilks and Moxon put it, "a man with ounces of pus in his brain may continue to do good mental work, and have full use of his limbs." When symptoms do come on, even in cases where the abscess is well encysted, and therefore old, the course of the case is often acute; hence the difficulty in the diagnosis from meningitis. The symptoms in some cases of cerebral tumour are quite similar, and very often the only means of deciding is by finding or not finding ear disease. This is not quite decisive, for, as stated, there is sometimes tumour (scrofulous) in cases of aural disease. Then, as a rule, the earliest symptoms of fatal cerebral or cerebellar abscess (as of tumour) are only such as severe headache and vomiting. The rule is that, in ear cases, such unmistakable nervous symptoms as hemiplegia, convulsions, and tetanoid states, come on late; and in many cases of cerebral or cerebellar abscess from ear disease they do not come on at all. The occurrence of headache and vomiting, both in cases of abscess and tumour, misleads to the erroneous diagnosis of stomach and liver derangement. The intensity of the headache, its occasional occurrence in unusual places—at the occiput, for example—its persistence, and the "purposeless" nature of the vomiting, often with clean tongue, would negative that diagnosis. If the ophthalmoscope were used in all cases of intense headache, mistakes in diagnosis would often be corrected. There is often optic neuritis, but, as it frequently happens that this pathological condition is unattended by any symptom (defective sight), it is usually not looked for. Occasionally acute intracranial disease is erroneously inferred, in cases of ear disease, from the occurrence of active mental symptoms (delirium). This is, the author thinks, very poor evidence of the existence of acute primary brain disease of any kind, and should not be trusted until acute non-cerebral disease has been carefully excluded. Although the brain is the organ of mind, the trustworthy symptoms of acute affection of it or of its membranes are not mental, but are such as severe headache, vomiting, constipation, retracted belly, and alterations of pulse, especially slowness and irregularity. Delirium does occur in some cases of acute cerebral disease, but rarely to such a degree as in acute non-cerebral affections. It should never be forgotten that, with rare exceptions, a man who has acute brain disease first comes to us when he has severe headache and vomiting, and not for anything wrong with his mind. Supposing that we could be sure there was abscess, we cannot usually tell whether it be in the cerebrum or cerebellum. We can only decide when there occurs such a symptom as hemiplegia, or unilaterally beginning convulsions, or partial aphasia, to point to the cerebrum; or reeling or tetanoid

states to point to the cerebellum; but in cases of cerebral abscess, however caused, these symptoms often occur late, and the author has never seen any of them in cerebral or cerebellar abscess from ear disease. A patient may recover for a time from symptoms of cerebral abscess, just as he may from symptoms of cerebral tumour; the encysted abscess, like the tumour, mostly (especially early in the case) causes symptoms, not by destroying or squeezing nervous organs, but by acting as a "foreign body," causing a local encephalitis. It is possible that this secondary acute process passes off when recovery follows, leaving some softening. It is clinically important to know that a patient, with abscess from ear disease, may, after being acutely ill, and yet apparently not near death, die suddenly. So it is in some cases of tumour. As in these cases there is no rupture of the abscess, and sometimes at least no rupture of vessels of the tumour, and as there is agonizing pain, the author thinks it is the pain that kills, and considers it very important to relieve severe pain in such cases by narcotics.

5. *Pyœmia.*—This is well known to occur from ear disease, and may be mistaken for meningitis or abscess. Negatively, there is no excessive pain (there may be a swollen optic disk); there are often severe rigours, and great rises and falls of temperature; the presence of delirium, especially without severe headache, would tell in favour of pyæmia. Recovery may follow. There may be both pyæmia and meningitis, as there often are after injuries to the head. In meningitis from injury to the head, there may be no severe pain.

6. Hemiplegia occurs sometimes in children who have ear disease. Cases were spoken of in which the paralysis was on the side opposite the ear disease, and in which there was no convulsion and no loss of consciousness at the onset. In no such case had the author had a post-mortem examination. But, as (excluding cases where there was valvular disease of the heart, rheumatic fever, or signs of "coarse" brain disease) the causation of hemiplegia in children was exceedingly obscure, it was right to suggest the possibility of venous thrombosis leading to local softening, to insure definite search at post-mortem examinations. Roosa had seen two cases of hemiplegia with ear disease. In one patient, a boy of ten, in whom the hemiplegia was of the same side as the ear disease, as both the auditory and portio dura were paralyzed on the same side as the arm and leg, it is a possible thing that there was some disease pressing on the crus cerebelli; there is no doubt that, as Brown-Séquard has long ago stated, disease here would account for the symptoms the patient had. Roosa thinks there was hemorrhage betwixt the dura mater and the bone. Roosa's other case was a man of sixty-two, and here the hemiplegia was on the side opposite the ear disease; in a man of that age the paralysis might, at least, quite as well be interpreted by local softening from arterial thrombosis, a pathological process unconnected with the aural affection.

7. Epilepsy or epileptiform seizures occasionally occur with ear disease. In a disease so calamitous and so obscure as epilepsy, we could not afford to overlook any associations. Admitting a relation, the accepted explanation would be that the ear disease provokes the seizures by reflected irritation. The author does not accept that hypothesis; he has been erroneously said to do so. Were this the process of causation, the treatment of the aural disease is the important matter; but, then, no medical man neglects to treat otorrhœa under any circumstances whatever. The author suggested another hypothesis—the possibility that the aural disease led to disease in Hitzig's and Ferrier's "region;" for, in some cases, the aural disease was associated with epileptiform convulsions, starting in the hand, face, or foot of the opposite side. In one such case, the author had found a large tubercular or scrofulous tumour of the hemisphere on the side of the ear disease, and on the side opposite the convulsions. He thought it possible that the disease is sometimes local softening from venous thrombosis, the convulsions depending on instability of gray matter around the part softened. He had no direct evidence of this, but he thought he had some indirect evidence of it. He related a case in which a man who had phosphorous necrosis of the jaw had, during an acute illness, frequent epileptiform affections affecting the left side of his face, both sides of the thorax, and slightly the left arm. (In passing, the author remarked

that this case was one of those verifying Broadbent's now well-known hypothesis, that there is a double representation in the brain of the bilaterally acting muscles.) In the intervals of the attacks, there was paralysis of the face almost as complete as in ordinary Bell's paralysis of the face. At the necropsy there was, although not ear disease, yet an equivalent state of things, there being pus in the right lateral sinus, and from this a vein with creamy contents was traced to that part of the right side of the brain which was most diseased; about the anterior end of the Sylvian fissure there was purulent softening and red softening. As the lesions were more wide-spread, and as the case was acute, the evidence was only very indirect towards the interpretation of chronic cases, but was, the author thought, worth consideration in that regard.

8. *Aural or Auditory Vertigo, or Menière's Disease.*—The author believed that almost any kind of ear disease would cause paroxysms of vertigo and reeling, with faintness and vomiting. He stated briefly various kinds of disease of the ear he had seen associated with the paroxysm, expressing his opinion that the paroxysm always depended on the trouble of the auditory expansions in the labyrinth, whether from actual disease therein or disturbances from without. He insisted that, besides cases with paroxysm, there were, so to speak, chronic cases. With ear trouble, it was not a very uncommon thing to find slight giddiness and trifling reeling when the patient walked. These cases had, he thought, not received sufficient attention. He referred to the case of a medical man, deafness of the right ear occurring immediately after the discharge of a heavily loaded gun; the patient always afterwards tended to the left. To the case of another medical man, who, besides having paroxysms with right-sided deafness, was always giddy if, when lying down, he turned over from right to left; to the case of a patient, the subject of Menière's disease, who would become giddy, and feel as though pushed forwards whenever she bit anything crisp. The explanation suggested of this last case was, that the symptoms were owing to contraction of the tensor tympani, a muscle acting along with the masticatory muscles. The paroxysms were generally explained by the laity, and not unfrequently by medical men subjects of the affection, as being caused by stomach and liver derangement. The author urged that the mere concurrence of deafness with the paroxysmal or chronic symptoms should not alone settle the diagnosis. He passed in brief review the most characteristic symptoms of five great varieties of vertigo—(1) stomachic, (2) nervous (often sexual) exhaustion, (3) ocular, (4) epileptic, (5) aural or auditory. Great attention should be paid for diagnosis to what Krupp has called the limitation of the "field of audition" to the loss of perception of certain notes; if the loss were of some *intermediate* notes, it would, the author thinks, point to disease in the cochlea. He tried to show how we should distinguish betwixt a case of chronic unsteadiness from aural disease, that from cerebellar disease, and that from ocular palsy. Finally, he gave his speculations as to the *modus operandi* of the ear disease. There were two sets of symptoms—*a*, "vital" (faintness, perspiration, irregularity of pulse, etc.); *b*, locomotor (vertigo with or without reeling). He attributed the former to disturbance of, or actual disease in, the cochlear division; the latter to disease or disturbance of the semicircular canal divisions. The former division was, he suggested, chiefly afferent to the medulla oblongata, the auditory nucleus having (Lockhart Clarke) close connections with the vagal and spinal accessory nuclei. The latter division, he thought, represented that part going, according to Lockhart Clarke, to the cerebellum. The "vital" and locomotor symptoms were due to disturbance of the medulla oblongata and cerebellum respectively. He referred to Goltz's theories, to the experiments by Vulpian and others on the semicircular canals. He mentioned that Pierret had recently spoken doubtfully as to the existence of relations betwixt the auditory nerve and the cerebellum. Cyon has recently found that irritation of each of the semicircular canals is followed by a particular ocular movement—a very significant thing towards the interpretation of auditory vertigo.

Exophthalmic Goitre.

Mr. Burney Yeo, at the meeting of the Clinical Society of London, on March 9th (*Lancet*, March 17, 1877), brought forward two cases of exophthalmic goitre, one of which presented some phenomena which he believed to be new. The patient, a married woman thirty-five years of age, came under observation in May, 1876, having suffered from palpitation for about three months. She complained also of pain in the left side, cough, and dyspnœa. She had lost flesh, had no appetite, and was constantly troubled with vomiting and diarrhœa. She frequently became hot and flushed, and perspired profusely. More than eighteen months before her friends had noticed a change in her appearance during her recovery from an attack of fever which almost immediately followed confinement, which she thinks was unduly hastened by the administration of ergot. She then looked so wild that her friends would not let her look at herself in the glass. When Dr. Yeo first saw her there was very marked exophthalmos of the left eye, with considerable enlargement of the right lobe of the thyroid. Pulse 136. Both the thyroid enlargement and the exophthalmos presented a decidedly unilateral character. Digitalis and belladonna produced no effect upon the palpitation. In June a new and singular phenomenon was noticed; as the left eye had become prominent, the hairs of the eyebrow, all the eyelashes of the lower lid and the inner two-thirds of those of the upper lid, had slowly disappeared. In October, having derived no permanent benefit from any kind of medical treatment, she went to Ramsgate for a fortnight, and was greatly benefited by the change. The left eye was still very prominent, and the thyroid body (right lobe) hard and enlarged. Having regard to the hardness of the thyroid tumour, some iodide of potassium was given internally, and rubbed in externally with temporary benefit. The pulse fell from 132 to 112, the thyroid enlargement lessened, and the general health improved. In November all the symptoms became aggravated, and diarrhœa troublesome. A systolic murmur over the base and along the carotids became now audible. She again took digitalis without any effect. The systolic murmur became louder and more distinct, and was heard on December 11th all over the cardiac area. It was now noted that the right eye had become somewhat prominent, simultaneously with some enlargement of the left lobe of the thyroid. Since the right eye had been getting prominent the hair of the eyebrow and the eyelashes on that side have been disappearing. Latterly the patient had been getting worse, the exophthalmos and cachexia more marked; diarrhœa, perspiration, and fatigue on the least exertion, with arrest of the catamenia during the last three months. The pulse ranged from 112 to 130; there was some cough, with sanguineous expectoration. An ophthalmoscopic examination by Mr. Soelberg Wells showed the fundus of the eye to be quite healthy. Mr. Wells called attention to the retraction of the upper lid, due to irritation of the unstriped muscular fibres of Müller, which are supplied by the sympathetic. After introducing another patient with unilateral exophthalmos, Dr. Yeo called the attention of the society to the following considerations: 1. The order of evolution of the phenomena. He doubted the correctness of the assumption that the cardiac excitement usually preceded, or had any causal relation to, the exophthalmos or the goitre. In the case shown, the exophthalmos appeared to have preceded the palpitation by a considerable period. He believed they were effects of a common cause. 2. The occurrence of unilateral exophthalmos, as well as unilateral enlargement of the thyroid. 3. The remarkable fact of the shedding of the hairs of the eyebrows and eyelids coincidently with the protrusion of the eyeballs, and the peculiar crossed manner in which the phenomena were developed. 4. The tendency to regard too exclusively the local phenomena of the disease, to the neglect of the more widely diffused manifestations, such as the constantly recurring diarrhœa, the profuse perspirations, and paresis of cutaneous vessels, and the general mobility and irritability of the nervous system. From these and other considerations Dr. Yeo argued in favour of a central nervous lesion as the pathological basis of the phenomena. Dr. Greenhow had observed a similar falling off of hair in a

case of the disease which was under his care. The patient (a lady) lost nearly all the eyebrows and eyelashes during the course of the disease. She attributed this to the profuse sweating which had preceded it. He had observed also the partial or unilateral character of the disease in some cases, though not in a crossed manner. The right lobe of the thyroid was often enlarged before the left, and in a greater degree. This he had seen in two or three cases. The exophthalmos might also be greater on one side; in this lady it was greater on the right than on the left side, one eye being capable of closure some time before the other; but in all cases this preponderance of symptoms was on the same side, usually the right. For treatment he had employed in this case all the usual remedies, and at last gave iodide of potassium in five-grain doses, with half a drachm of syrup of iodide of iron with the most beneficial results. Change of air, first at Margate and then at Schwalbach, also had a great deal to do with the cure. The origin of the disease seemed in nearly all cases to be traceable to a mental shock; in one case the sudden loss of three children from scarlet fever, in another hyperlactation, and in another some other mental shock of severe nature was followed in a comparatively short time by symptoms of the disease, the exophthalmos being the thing first noticed usually by the friends of the patient. Dr. Theodore Williams had had three cases under his care, one of which, in some degree, resembled one of those brought before the society by Dr. Yeo. The treatment which he adopted was, however, a different one. He had given tincture of perchloride of iron in doses of 15 to 40 minims with decided improvement, the pulse becoming slower, and the ocular protrusion less marked. But the greatest benefit was derived from change of air; he sent the patient to Norwood, believing that a cold dry climate was the most beneficial in such cases. He thought iron very valuable in the treatment, although its employment was discredited in text-books. Mr. Casson having seen a good deal of common goitre—"Derbyshire neck"—had been led to doubt whether exophthalmic goitre was any more than a variety of that disease. In some cases he had seen marked nervous symptons associated with ordinary bronchocele. He mentioned in particular the case of a man with a very large cystic bronchocele, who suffered from flushings, frequent perspiration, and a tendency to faint from slight causes—in fact, a general hysterical condition. There was also some exophthalmos. An attempt at suicide by cutting his throat made a deep gash into the tumour, producing profuse hemorrhage and evacuation of some of the cysts, and the tumour subsequently disappeared, and with it the exophthalmos. He believed that an anæmic and hysterical condition was often found in ordinary goitre, and that iron and iodide of potassium were of the greatest use in its treatment. Dr. Burney Yeo, in reply, said that he ascribed the origination of the disease in the first case to the confinement and the attack of fever. The crossed character of the affection was well marked; he only threw it out as a suggestion that it might indicate a central origin for the disease. With regard to the employment of iron and of iodine, he was glad to find that they were approved, for both were denounced by authors in this affection. One difficulty in the employment of some drugs which were believed to be beneficial was the tendency to aggravate the diarrhœa, which in some cases formed such a troublesome complication. In some cases, digitalis, belladonna, and iron all aggravated the diarrhœa. A change of air and scene was no doubt the first remedy, this being indicated by the general nature of the disorder. Another case had derived great advantage from going to Brighton. He expressed his astonishment that any one should express the opinion that ordinary bronchocele and exophthalmic goitre were at all identical. Dr. Glover observed that, with reference to the loss of hair, the condition was not confined to the left eyebrow, but the patient said she had also lost the hair from the right axilla and the right arm. Dr. Yeo had not been informed of this before by the patient. Mr. Callender, in reference to the point under discussion, mentioned the case of a gentleman who came to him in great distress for the loss of one-half of his moustache. Subsequently the other half and the beard and whiskers also fell off.

Epidemic Jaundice.

The *Berliner Klin. Wochenschift* (Nos. 7, 8, and 10, 1877) contains an interesting account, by Staff-Surgeon Dr. C. KOHNHORN, of Wesel, of a severe epidemic of catarrhal jaundice which occurred in 1872, in the Fifth Rhine Infantry Regiment, to which he was attached. The first case was observed on March 15, 1872, and, up to the end of May, fifty-eight cases in all occurred. These cases were not, however, equally distributed over the three battalions of the regiment, but thirty-eight occurred in the first battalion, which was 547 men strong; thirteen in the second battalion, 562 men strong; and seven in the fusilier battalion, containing 537 men; the percentage of cases being 6.93, 2.31, and 1.30, respectively, for the three battalions. The remarkable point about this epidemic is that it was almost absolutely restricted to the Rhine regiment, and that in five other regiments stationed in the same neighborhood only a single case was reported in March, April, and May. The question naturally arose, To what circumstance was this peculiar distribution due? All the cases of jaundice were of a catarrhal nature, and hence attention was especially directed to discovering the cause of the grastro-duodenal catarrh, on which the hepatic symptoms certainly depended. At first the commission of inquiry could find nothing wrong with the diet of the soldiers; but after careful investigation had shown that there was nothing which could be found fault with in the construction of the barracks, or in the soil, the drainage, ventilation, and other external surroundings of the affected regiment, and that there was nothing in the duties which the men had to perform that would render them more liable than the other neighboring regiments to this special form of disease, inquiry had at last to be re-directed to the question of food. Without entering into minute details, we may say that it was eventually proved that the cause of the epidemic was a preponderance, in the rations of the affected regiment, of pork and dried peas and beans; and also that the number of cases in the three battalions of the Fifth Rhine Regiment was directly proportional to the quantity of these articles of food supplied to the men. The investigation also brought to light a curious fact; that all the soldiers attacked by catarrhal jaundice, with a single exception, were in *their first year of service;* and that the older men, who were more seasoned and possessed of greater resisting power, remained unaffected by the prolonged ingestion of the above indigestible foods. In the above epidemic, all the cases recovered, and they ran the usual course of simple catarrhal jaundice; but, as Dr. Köhnhorn points out, the disease, though harmless in itself, is by no means to be regarded as a matter of no consequence, for it renders those whom it attacks unfit for their occupation for weeks, or even months. Thus, in the case before us, the average time which each patient was under treatment was twenty-five days; the shortest time that any case was under treatment was five days; the longest, seventy-seven days; and the total duration of the treatment of all the cases together was 1458 days. Other epidemics of catarrhal jaundice among soldiers, similar to the above, and due to too great uniformity in feeding, have been reported in Germany. One especially, which attacked the First Bavarian Army Corps before Paris in February, March, April, and May, 1871, deserves notice. Out of 33,380 men (the average strength of the army corps), 799, or 2 4 per cent. of the whole corps, suffered from catarrhal jaundice; in some of the regiments as many as 5 per cent. of the soldiers being attacked. It was proved that the disease was due in this instance to the fact that the men were almost entirely fed on fresh mutton and salt beef, and especially the latter. Owing to the season of the year, and to other circumstances, fresh vegetables were unattainable, and they were replaced by rice (to which the men had an extreme objection) and by rations of pea-sausage (*Erbswürst*) once or twice a week. It is an interesting fact that a cavalry regiment of 1240 men, which was posted somewhat further from Paris, and was able to obtain occasional supplies of fresh vegetables and potatoes, and especially salad made with dandelion (*Leontodon taraxacum*), had not a single man on the sick list from jaundice. Dr. Köhnhorn mentions other instances of similar epidemics, and his paper is well worth the perusal of military surgeons.—*Med. Times and Gazette*, March 24, 1877.

Treatment of Catarrhal Jaundice.

Dr. KRULL, of Güstrow, Mecklenburg (*Berlin. Klin. Wochenschrift*, No. 12, 1877), recommends enemata of cold water as an excellent remedy in the above disease. One to two litres of water at a temperature of 59° Fahr., which may be gradually increased to 72° Fahr., are to be slowly injected into the rectum by means of an irrigator once a day. The patient is to retain the water as long as possible. The first effect of this treatment is the rapid disappearance of oppression in the epigastrium, as well as of nausea and headache; the appetite also quickly returns. In half the cases thus treated (eleven in all) the feces were tinged with bile after the second injection; and in the cases of longest duration, in one of which the disease had existed for more than a year, their normal colour returned not later than the fourth day. The largest number of injections used in any one case was seven. Most of the patients had previously been treated unsuccessfully by the ordinary methods. Dr. Krull explains his results on the supposition that the cold water not only increases the peristaltic action of the bowel, but also excites sufficient contraction of the bile-ducts to enable them to overcome the obstacle due to catarrhal swelling or inspissated mucus at the entrance to the duodenum.—*Med. Times and Gaz.*, March 31, 1877.

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Changes in the Bloodvessels in Bright's Disease (Arterio-Capillary Fibrosis).

It will be well within the recollection of our readers that Sir William Gull and Dr. Sutton brought forward, at the Royal Medical and Chirurgical Society, in May, 1872, a paper on this subject. It gave rise to most animated debates, and to debates, too, which resulted in a much more enlarged view as to the nature of Bright's disease being taken than had been previously held. Dr. Johnson, in December of the same year, again brought up the subject in an able paper, which was also read to the same Society. The views of these authors differed very widely. It may be as well to briefly summarize what was then taught by them respectively, before giving the substance of a communication on this same subject by Sir WILLIAM GULL and Dr. SUTTON, made to the Pathological Society on March 6. These authors had arrived at the following conclusions:—

1. That there is a diseased state, characterized by hyalin-fibroid formation in the arterioles and capillaries, which is often accompanied by atrophy of the subjacent tissues. 2. It is probable that this morbid change begins in the kidney, although there is evidence of its beginning primarily in other organs. 3. The contraction and atrophy of the kidney are but part and parcel of the general morbid change. 4. The kidneys may be but little, if at all, affected, whilst the morbid change is far advanced in other organs. 5. This morbid change in the arterioles and capillaries is the primary and essential condition of the morbid state called chronic Bright's disease with contracted kidney. 6. The clinical history varies according to the organs primarily and chiefly affected. 7. In the present state of our knowledge, we cannot refer the vascular changes to an antecedent change in the blood, due to defective renal excretion. 8. The kidneys may undergo extreme degenerative changes without being attended by the cardio-vascular and other lesions characteristic of chronic Bright's disease.

Dr. Johnson, who had previously called attention to the changes in the small arterioles, considered them due to muscular hypertrophy of the middle coat. In a paper brought before the Royal Medical and Chirurgical Society, December 10, 1872, he argued that this "hyalin-fibroid" was not an *ante-mortem* pathological change, but rather a *post-mortem* mechanical result of the method of preparing the specimens for the microscope—the action of glycerine and camphor-water, in fact. He argued, indeed, that this change was never found in vessels examined immediately after their removal from the body, or preserved in dilute spirit, instead of in dilute glycerine; in other words, he tried to show that the "hyalin-fibroid" was an artificial product,

and not a morbid one; certain conditions, such as cause of death, and length of time after death at which the specimens were prepared, favouring the production of this hyalin change.

In further developing what was really the whole gist of their former paper —viz., that "the state commonly called chronic Bright's disease with contracted kidney was not essentially renal"—Sir William Gull and Dr. Sutton in their latest communication wished to show that a wider investigation of concomitant or even antecedent changes in other organs was called for. They believe that after the middle period of life there is very commonly a pathological condition of the body which leads to fibroid changes not only in the kidneys, but more or less generally in other organs, the renal affection being but a more pronounced local expression of this general disease or degeneration. Clinical medicine from this point of view would recognize the significance and bearing of many now supposed unimportant ailments, and might find that these ailments are signs of commencing tissue-changes of the kind in question springing up in one or more of the several organs, it might be in advance of renal changes, and foreboding their advent. They believe that these tissue-changes may in some cases result from renal disease, while in other cases they may be independent of them. Dr. Johnson questioned the ante-mortem nature of the "hyalin-fibroid" deposit, which they looked upon as a characteristic change; further observation had, however, confirmed them in their views. "As to the hypertrophy of arterioles, we may say, as we did in our earlier communication, that though the muscle in some of the larger arterioles especially seemed to be increased, yet we are sensible of the difficulty of giving a true interpretation to such an appearance." Neither could they state that the muscular layer has a *constant thickness in arterioles of equal calibre*. Hence the possibility of over- or under-estimating what is normal. The changes in the spinal cord—the organ which was especially under observation—varied from simple exudation to a most extensive fibroid degeneration.

The earliest changes, which required contrasting with the normal cord in order to appreciate them, consisted of homogeneous masses, diffused amongst the nerve-elements and connective tissue, which were otherwise normal. These masses have also been called "colloid" bodies. The next stage was characterized by slight thickening of the vessels in addition to this homogeneous exudation; then gradually the fibroid change becomes more and more marked: and examples of this were shown. The ultimate result being that the new hyalin-homogeneous substance was found to such an amount as to compress and invade the nerve-tubules, so that the axis-cylinders became either destroyed or invisible. The fibroid changes resemble those of granular contracted kidney, in that they spread from the surface membrane inwards, and from around the arterioles and capillaries, compressing the nerve-tubes, causing them to atrophy, just as the tubules of the kidney are invaded and finally destroyed. These changes, nevertheless, for a long time leave many tubules unaffected, and hence both cord and kidney may retain much of their functional activity, even when they are the seat of very extensive fibroid change.

At the following meeting Dr. GEORGE JOHNSON brought forward a paper on the same subject. Referring to former papers and views on this subject he said he felt quite content, as Sir William Gull had suggested at the last meeting, to leave it to the profession to judge between them, and he confidently awaited their verdict. He was quite unable to accept the altered condition of the smaller vessels as one due to fibroid change. To him it was a simple and a natural hypertrophy of the muscular coat of the arteries. In one of the specimens these gentlemen had shown, a portion of the muscular coat—the circular muscular fibres—was considered to be of the nature of hyalin-fibroid; while that which he (Dr. Johnson) considered as the longitudinal layer of the muscular fibres was described by his opponents as the unaltered muscular layer. This Dr. Johnson considered "a curiously inaccurate description" of what, after all, was a very well-known histological fact—viz., that all arteries, having muscular walls at all, always had the muscle arranged into two layers. "It is evident, therefore," said he, "that they believe the outer layer in the renal artery to be the counterpart of the so-called hyalin-fibroid layer in diseased

arteries of the pia mater. The fact being that this layer in the pia mater is external to the muscular layer, and is composed of the distended fibrous tunic, while in the renal artery the fibrous tunic is usually inconspicuous, and that which they mistake for it is the hypertrophied circular layer of muscular fibres." "Now, this erroneous description of the thickened renal arteries serves in part to explain the difficulty which the authors find" in establishing hypertrophy of the muscular walls, "since it proves that they are so prepossessed by their hyalin-fibroid change as to mistake for it the most unquestionable example of arterial hypertrophy." To the assertion that the muscular layer varies in thickness in different parts of the same vessel, and that it is often manifestly diminished in thickness, Dr. Johnson replied that he was quite of the same opinion; only he explained it as a degenerative change in the hypertrophied muscle, similar to that often found in the substance of the heart under similar circumstances. Having thus passed in review and criticized the various doctrines held as to the microscopic appearances in the arterioles, he proceeded to discuss the cause of the hypertrophy—for, in spite of all that has been urged, he still regards it essentially as a hypertrophy. Sir William Gull and Dr. Sutton, as we stated in a former article, regard this not as hypertrophy, but as part and parcel of a general *fibroid* degeneration of the entire system; they argue "that the state commonly called chronic Bright's disease with contracted kidney is not essentially renal." Dr. Dickinson, who believes that the changes are chiefly due to hypertrophy of the muscular coat, holds that the impediment to the circulation is in the capillaries; and that "the function of the arterioles is by their contraction to assist the heart to drive the blood onwards. In consequence of the capillary obstruction, the heart and the arteries, whose common function is jointly or alternately to carry on the blood, become habitually distended, are stimulated by distension to over-action, and by over-action to hypertrophy." Dr. Johnson's own view is that the arteries close, to shut out, as it were, blood which is charged with foreign or effete matter, much as the glottis closes against noxious vapours; that it is therefore a reflex action, and is first set up by an antecedent condition of the blood.

Before proceeding to criticize the theory of interstitial fibrosis, Dr. Johnson explained his views on contracted granular kidney. He holds that the first change consists in disintegration and destruction of the glandular epithelium of the convoluted tubes, the products showing themselves during life in the form of granular and other casts. The appearances under the microscope of such a kidney have led to the doctrine of interstitial fibrosis, while in reality the changes are only altered and atrophied tubules. They have lost their epithelial lining, and have collapsed, while the more stable and more resisting arterioles and capillaries may have become very slightly thickened. One of Dr. Johnson's strongest objections to the theory of a new interstitial fibrosis is the fact that the intertubular capillaries may even be quite normal, while the characteristic intratubular changes may be seen in various stages of progress. We feel bound to differ from Dr. Johnson, having frequently seen the appearances he speaks of. But side by side we have also seen the epithelial lining of the tubules almost intact, while the surrounding stroma, which normally is exceedingly small in quantity, was greatly increased, and presented the appearance which Dr. Johnson considers due to collapsed or atrophied tubules. Dr. Johnson argued that a fibroid degeneration would close on the tubules and compress and destroy them. Such a destructive change could, however, only occur very late in the disease, and it is even highly probable that life would be destroyed long before any such complete metamorphosis could take place.

Dr. Johnson did not address himself sufficiently to what was, after all, the spirit of the discussion. He confined himself chiefly to the condition of the bloodvessels; while Gull and Sutton, in support of their former *special* conclusions, advanced others of a more *general* character. The latter observers first of all described certain changes—"hyalin-fibroid"—in the vessels, which Dr. Johnson endeavoured to prove to be the mechanical results of the reagents employed in mounting. They, in order to prove themselves right and Dr. Johnson wrong, continued their researches, and extended them from the vessels to other organs, and then used other mounting material. The result has been

to show that the same kind of "hyalin-fibroid" new growth is found in almost every organ of the body; and at the last meeting of the society they showed it in all stages of development in the spinal cord, where of course there could be no hypertrophy of muscle with which to confound it; and Dr. Johnson was not able to bring up any facts to invalidate these researches. He should have been prepared to explain the undoubted presence of this *general* fibroid degeneration; instead of which he chiefly argued from the appearances found in the smaller arteries.

There may be truth on both sides, but, for our part, we have long held and felt that the state commonly called chronic Bright's disease with contracted kidney may not always be essentially renal, and that there may be an antecedent stage consisting of something more than mere dyspepsia, which is itself probably a symptom only, or an altered blood condition which is rather a consequence than a cause of the disease. We believe, too, that such was the feeling of the vast majority of the members of the Pathological Society at the termination of the interesting discussion of Tuesday last.—*Med. Times and Gaz.*, March 17 and 24, 1877.

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Case of Cystinuria.

The case occurred in the hospital practice of Professor EBSTEIN, of Gottingen, and is reported by Dr. Trieman, who instituted a series of chemical investigations respecting cystin, and a comparative examination of the leading characters of cystinuria.

The patient was a youth, aged 18, an apprentice to a tradesman, and had previously suffered from no severe illness. His father had died in his forty-fifth year from liver disease. Of his sisters one died from typhus, but two were alive and in good health. The mother was also alive and well. For four years he had noticed tremors of his hands to no inconsiderable extent; these had rather increased, and interfered with his writing. He had also noticed at times, chiefly in the morning when in bed, stabbing pains in the renal region; these were, however, not very acute, and oftentimes disappeared on turning himself in bed. But in the spring of 1875 he was seized with very severe pain in the left renal region, accompanied by vomiting, which confined him for three days to his bed and then vanished, leaving him apparently well. A few weeks afterwards, on desiring to pass water, he found he could not do so, even on straining, except in drops; this lasted for an hour, without actual pain, and then the urine flowed in a full stream. This state of things recurred eight days subsequently, and after powerful straining he passed a calculus, and immediately afterwards had a free passage for the water. The calculus came into the hands of Professor Ebstein, who discovered it to be composed of cystin, and admitted the patient into his ward on the 8th of April. He is recorded as being of middle stature, of weakly conformation, and pallid. When he outstretches his arms they exhibit a constant tremor. In his general condition nothing otherwise abnormal was noted. His liver was not enlarged and the stools were normal. The urine had a whitish sediment and natural reaction. Its specific gravity was 1019, and it contained no albumen, Its quantity was natural. The deposited matter, on microscopical examination, showed the presence of transparent, glistening, hexagonal laminar crystals, which, by their chemical reactions, indicated the presence of sulphur in considerable quantity and their relation to cystin. The colour of the urine, although of a clear yellow, had, withal, something of a greenish hue, and after standing some days a smell of sulphuretted hydrogen was given off.

The urine of the mother, of a maternal uncle, and of one adult sister, was examined without detecting a trace of cystin, but the urine of a brother twenty-four years old showed a strong reaction of sulphur, although no crystals of cystin were detected in it.

The calculus passed had an elongated shape, a yellowish colour, and waxy lustre, and its surface strewed with angular points. Its weight was 0.24 of a gramme.

The patient continued in hospital until the middle of February without any signs of illness, excepting the tremors, and occasion was taken to repeatedly examine his urine. The analytical methods are fully detailed by Dr. Trieman, but cannot be reproduced here; suffice it to note the principal results. First, a direct relation subsisted between the proportion of sulphuric acid and the cystin. 2. Urea was present in normal quantity. 3. Uric acid was considerably reduced in amount 4. The filtered cystin-urine showed a distinct sulphur reaction, due chiefly to cystin held in solution, and when somewhat concentrated it gave off a slight sulphurous odour. The cystin was found to be discharged in the urine without interruption. The writer finds in various papers and treatises, fifty-two cases of cystinuria on record; thirty-seven occurring in males, and fourteen in females. The sex is not noted in Willis's case. The disease seems most common in early and middle life. No case is on record in an individual over fifty. Details are wanting to show the duration of the affection, but it is sufficiently clear that it lasts for a considerable time, often for a period of many years. It shows no connection with occupation or position in life, or with constitutional peculiarities. The notion of Dr. Salisbury that it is in some way connected with rheumatism has no support from statistics. The tremor of arms and hands witnessed in Dr. Trieman's case resembled that of drunkards, but cannot be assigned as a natural feature of cystinuria. A family proclivity to the disease appears to be established. In several instances it has been observed in twins, and its hereditary character has been proclaimed by some, though the foundations for the hypothesis are insufficient. Its connection with liver disease is equally unproved. The histories of cases prove that it is not always continuously excreted after once appearing in the urine, but may disappear for a time, and possibly altogether. Hence the absence of cystin in the urine is not evidence that a calculus of that substance may not exist, and, on the other hand, the presence in the urine of cystin is no proof that a calculus exists. So, likewise, the passing of a cystin calculus will not necessarily imply that a subsequent calculus has the same nature. In almost all instances the calculi have passed away through the urethra. In cases where this extrusion does not happen, and surgical interference is necessary, the right course of proceeding is by lithotrity.

Owing to the occurrence of cystinuria without the formation of calculi, and the absence of definite symptoms and suffering with its presence, it is most probable that it is oftener present than supposed. Its rarity, as observed in women, is at least partially attributable to the greater facility with which calculi can be discharged with them.

According to Beale and Bartels, the urine discharged at night is richer in cystin than that passed by day. In some instances an inflammatory state of the urinary passages has been remarked. The hexagonal lamellar crystals vary very much in dimensions: they are also often massed together in six-sided groups. Their sides, also, are not infrequently unequal.

The treatment of cystinuria is obscure; owing to the solvent action of alkalies on cystin; the use of these agents has been largely resorted to, but their efficacy is very doubtful. As to the cause of its production in the system, no satisfactory account can be given.—*British and Foreign Med. Chir. Rev.*, April, 1877, from *Deutsches Archiv*, 1876, Bd. xviii. p. 232.

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On the very frequent connection between Eczema and Diabetes Mellitus.

Dr. J. Braxton Hicks, in a paper read before the Medical Society of London (*Lancet*, March 31, 1877), said that it "comprises simply the result of my observations on the two diseases here named, without any attempt to do more than draw the attention of this very practical Society to a fact which, as it seems to me, has not obtained sufficient attention.

"Now, in doing so, it must not be supposed that I am ignorant of the observations made by many physicians, that there is very frequently in diabetes considerable irritation of the vulva in women, and orifice of the urethra in men, and that not infrequently this symptom has led to the first suspicion of the presence

of diabetes. Dr. Dickinson and Dr. Pavy, amongst others, have pointed this out clearly enough, and more recently Dr. Wiltshire, in a paper before the Harveian Society, has pointed out that, beside simple irritation, there is reason to believe there is a change in the nerve-tissue of the vulva. But the fact to which I now wish to direct attention is, that in cases of eczema of the general surface, and notably of the female genitals, there is in a very large majority distinctly pronounced diabetes also. Perhaps I may state this more faithfully by saying that, of those women who have applied to me as obstetric physician on account of eczema of the genitals, I have found about eight or nine out of ten with diabetes mellitus in a decided form.

"But I have further to add that, although it was principally in consequence of the affection of the genitals that they applied to me, yet, at the same time, there was clear evidence of eczema on other parts of the body, so freely, that there could be no doubt but that the eczema was a general and not a local trouble—I mean produced by a local irritant. And one would expect to find that those who may think it worth while to carry out observations for themselves will meet with a like result.

"It may be that in a person predisposed to eczema the saccharine urine is more specially irritating, and thus may give earlier signs of the condition. But in almost every case the eruption had extended into the groins and lower portion of abdomen, far away from the contact of the urine. I am not in a position to say how far all cases of general eczema are associated with diabetes; this I leave to others with more opportunities of studying both diseases in both sexes. Yet one would not be surprised to find the frequency of the combination considerable, when it is borne in mind that blood laden with sugar is most probably irritating; and also that pathologists incline to the opinion that both diseases are dependent on neurotic states. Be this as it may, the practical value of this knowledge is this—that we may be in many cases treating the eczema for any length of time by the most approved plans without any satisfactory result, till, on finding the diabetes, we treat this disease, and then very markedly there is a subsidence of the very distressing symptoms of the eczema, till, by continuing the treatment, in the majority we reduce the trouble, if not to cure, yet to a very tolerable condition.

"The treatment which I have employed has been the usual avoidance of sugar and substances tending to its formation, but not carried to quite the rigid extent advised by some, because I have found a slight relaxation of the very irksome rules more honestly followed, and for a longer period, than where restriction is excessive. I have generally given codeia twice daily. Patients remark that this remedy has a decided effect over the irritation—a result to be expected if only regarded as a general sedative; an effect it has in common with all opiates in alleviating the severe annoyance of the prickly itching of eczema. I have generally given bark with arsenic and other tonics, such as iron, etc., according to the condition of the patient.

"I have not brought forward a series of 'cases,' because the fellows of this Society are well acquainted with both diseases, and doubtless can call to mind the severe sufferings of women, often near the climacteric change, where the whole genitals, the upper thighs, and lower abdomen are covered with eczema, which often extends two or three inches up the vagina and between the buttocks, behind the ears, sometimes in the scalp and fingers.

"Before I had been in the habit of examining the urine of every case of this kind, I had a patient of about fifty years of age, some years of whose life were scarcely tolerable on account of this form of eczema, and who had been treated by all the remedies for that complaint. After two or three years she said to me, 'I do not know if it is of any importance to tell you, but I was many years ago pronounced to have a mild condition of diabetes.' I then examined her urine frequently, and found always full evidence of sugar.

"The nearly last case of eczema which came to me said her life for some four or five years had been a burden to her from eczema of the genitals, lower abdomen, and thighs. She had taken medicine continually for it, without any relief; and, as a last resource, had come to me. She had had no sleep at night, and was worn out. Her urine proved to be very heavily laden with sugar. She

was treated for diabetes, and in a very few days the eczema was better, and in three weeks had so much relief that she could get sleep, and no longer dreaded the future; and I expect from my observation of other cases, so long as she diets herself, she will complain but little of the eczema.

"Since writing the foregoing I have found a note in Trousseau as follows: 'With this perversion of the functions of the skin coincides another accident which has been observed rarely in men, much more commonly in women; it is an eczematous eruption attacking the genitals; and which is accompanied by a very distressing itching.' He then says, when in women of some age you find this eczema, not dependent on the leucorrhœa nor on menstruation, then our ideas should flow towards glycosuria; but I do not find any allusion to the general condition of eczema.

"Dr. Dickinson, in his new edition on Diabetes, cap. iv., notices the eczematous states of the vulva as peculiar to the disease, and often the first sign by which it may be recognized, and more rarely the orifice of urethra and glans is affected. At another part he remarks, 'Prout gives it as the result of his experience that carbuncles and malignant boils, and abscesses allied to carbuncles, are always accompanied by diabetes; this rule, however, appears to be by no means without exception.' He further says, 'Prout thought that there was a connection between cutaneous eruptions and diabetes, the eruption in his view preceding the disease; but later observations have shown this association to be at least infrequent; lichen has occasionally been noted in the course of the disease.'

"My experience shows me a very frequent association, and in a case I saw some weeks since of a lady with very severe but chronic carbuncular sloughs of the cellular tissue in all parts of the trunk, there had been most severe eczema for three years previously, and it was found on examining the urine that it was highly charged with sugar. My object in bringing this subject before this Society is to direct attention to the association of diabetes with general eczema, in order that our knowledge may be made more definite in the matter."

Surgery.

The Treatment of Tetanus by Chloral.

Dr. CHOPARD has collected in his work (*Thèse de Paris*, 11th August, 1876) 80 cases of tetanus, in which chloral alone or with other medicines has given good results. He rejects the employment of intravenous injections and of subcutaneous injections of chloral, and proposes the employment of chloral either by enema or by draught; the enemata are administered according to the method approved by Drs. Griffiths and Dujardin-Beaumetz; that is, by putting the solution of chloral into milk, to which the yolk of an egg has been added.

Dr. Chopard adopts the following conclusions: 1. The administration of chloral in tetanus is to be recommended. 2. Chloral in tetanus offers to the physician more than any other treatment the hope of saving his patient's life. —*Lond. Med. Record*, March 15, 1877.

On a Unique Case of Inoculation of the Eye by Vaccine Virus.

In the *Medical Examiner*, Dec. 21st, Mr. ANDERSON CRITCHETT relates the following remarkable case: "At the beginning of last Sept. I was consulted by a medical man in large practice in the North of England. On examining his right eye, I found the following condition. The lids and conjunctiva were swollen and red; there were lachrymation and photophobia, and the eye resented even the most gentle examination. A large grayish-white opacity could be

seen extending over the outer two-thirds of the cornea. The centre was raised, and from its general aspect and colour conveyed an impression of sero-purulent infiltration between the layers of the cornea. The condition of the anterior chamber and iris appeared to be normal. The history which I received of the case was as follows: About three weeks previous to his visit to me, this gentleman was vaccinating an infant, and, whilst stooping over the arm, a sudden and violent movement on the part of the child jerked the charged ivory point from his fingers into his right eye. Suspecting that some of the lymph had come into contact with the cornea and conjunctiva, he immediately and assiduously endeavoured to wash it out, but, as the sequel proved, without success. Inflammation supervened at the end of twenty-four hours, and was accompanied with severe symptoms, the cornea becoming gradually implicated, and developed such a form of opacity, combined with interstitial infiltration, as left no doubt that inoculation of vaccine virus had occurred, resulting in the formation of a true vaccine pustule.

"Three months have now elapsed since his first visit, all traces of inflammation have passed away, the conjunctiva has resumed its natural colour, the lachrymation and intolerance are gone, and the eye opens as readily as its fellow; but, occupying rather more than the outer half of the cornea, is a dense white opacity, which most seriously compromises the vision. As the area of clear cornea has sensibly increased since the subsidence of active inflammation, it is not improbable that further improvement may take place during the next few months; the question will then arise how far it may be expedient to endeavour to obtain an increase of the present very limited range of vision by means of a small iridectomy inwards." In remarking on the case, which Mr. Critchett says is, as far as he is aware, the only one of the kind on record, he considers that it is of interest not only on account of its rarity, but also "as illustrating the great danger of allowing vaccine virus to come into contact with the eye, since the absorbent power not only of the conjunctiva oculi, but also of the surface of the cornea itself, is so great as to develop in the manner described a complete vaccine pustule resulting in a permanent corneal opacity. It may also suggest a possible explanation of the manner in which the cornea is frequently affected in smallpox."—*Lond. Med. Record*, March 15, 1877.

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Connection between Diseases of the Organ of Hearing and the Nervus Trigeminus.

Professor Moos, of Heidelderg, has published a paper with the above title in Virchow's *Archiv für Pathologische Anatomie und Physiologie.*

He divides the diseases which affect the organ of hearing and the trifacial into two groups: 1. Cases of purely cerebral disturbance of the acoustic and the fifth nerve, in which the sensory portion only of the fifth is affected; and 2. Cases in which organic affection of the hearing organ is present, generally acute or chronic purulent inflammation of the middle ear, with disturbances of the trifacial, the latter having commenced when the hearing organ had become affected.

He relates four cases belonging to the *first group*, occurring at the ages of 14, 17, 21, and 45, and having assigned to them as their causes traumatic injury in one, cold in two, and some chronic affection causing ataxy in its course, but the cause of which was not determined. In this group, he says, the symptoms go, as a rule, from the trigeminus to the acoustic, and only in the traumatic case did they both enter together.

The hyperæsthesia may be trifling, and when so, is apt to be overlooked by the patient. It may disappear without anæsthesia coming on, and then it seems a case of deafness only. It is never double-sided. In one case it was almost total on the side affected, on another only on certain twigs. In one where the auricle and meatus were affected, the corresponding parts on the opposite side were anæsthetic. The patient whose affection had been gradually developed had suffered from migraine for many years, but it had disappeared before the anæsthesia of the same side came on. During the hyperæs-

thetic stage, certain disturbances of hearing may be present, especially an unusual sensibility to certain tones, noises, voices, etc., which, Professor Moos thinks, depends on an increased sensitiveness of the meatus.

Anæsthesia was observed in three cases, and was total in two. Functional disturbance of the acoustic nerve was present in all the cases. In three of them it commenced with violent tinnitus, which gradually lessened as the acuteness of hearing was lessened, till with complete deafness the subjective noises entirely disappeared. Deafness became total in two; a third recovered entirely, the latter having had at the commencement of the affection a true hyperæsthesia of the acoustic nerve.

Professor Moos believes the seat of the affection to be central, and in a position where the acoustic and the sensory portion of the trigeminus stand in a close relation to each other. This is in the medulla oblongata, at that portion where the deep root of the acoustic nerve arises, which is in close relation to that fibrous bundle formed by the root of the trigeminus, from which, according to Arnold and Deiters, some fibres pass to the corpus restiforme and to the posterior columns of the spinal cord. He thinks these relations will explain certain combinations of symptoms which occur, but not all the combinations.

The treatment consisted of iodide of potassium, setons in the neck, and galvanism. Under these full recovery took place in one case—that in which the nature of the affection was not fully made out. Professor Moos's conclusions as to the use of galvanism are not favourable. Though believing that the constant current is the most natural treatment, he says the prognosis is very unfavourable. When the reaction of the acoustic by galvanism remains persistently absent, the prognosis is especially bad; and when reaction is present even at the commencement, improvement or recovery is not certain.

In the *second group* the affection of the trigeminus nerve may be previous to, accompany, or follow the affection of the auditory apparatus. It generally enters with it. The first branch is most often affected, the second less so, and the third still less. Only one branch is usually implicated. The diseases of the ear with which Dr. Moos has seen the derangement of the trifacial nerve combined are acute purulent inflammation of the cavity, chronic inflammation of the same, chronic inflammation of the mastoid, with or without phlebitis of the transverse sinus, and cholesteatoma of the cavity.

In *acute cases* Professor Moos supposes there may be (1) a simultaneous development of the neuralgia with the ear-affection, arising from the same cause; (2) a direct inflammation of the tympanic plexus with direct peripheral conduction through the small superficial petrosal nerve, or first centripetal conduction, and then eccentric appearances on a branch of the trigeminus nerve; (3) an otitis media purulenta neuralgica, analogous to the "iritis neuralgica" of Anstie.

In *chronic cases* he assumes either (1) an irritation of the tympanic plexus by pressure of exudation or accumulations; (2) perineuritis and neuritis; (3) communication of the inflammation to the temporal bone without caries, with partial pachymeningitis, affection of the sinuses, or inflammation of the Gasserian ganglion.—*London Med. Record*, March 15, 1877.

Nitrite of Amyl in Tinnitus Aurium.

In many diseases of the ear, the tinnitus is the symptom which causes the patient more annoyance than the impairment of the hearing; and in a large number of cases it does not subside with the disappearance of the causative disease. Dr. MICHAEL, of Hamburg, has tried the nitrite of amyl for the relief of the tinnitus. He was led to employ this remedy on account of its well-known sedative action upon the sympathetic system, especially the vaso-motor nerves, and the fact that many forms of tinnitus are caused by an irritative state of the auditory nerve, or are the result of hyperæmia, or anæmia of the brain, or the internal ear.

He administered the nitrite of amyl in twenty-seven cases. The results were as follows: A greater or less degree of improvement was obtained in nineteen cases. Among these were three in which the tinnitus disappeared entirely from

one ear and was diminished in the other ear. In four cases, a by no means inconsiderable improvement of the hearing was observable. Three cases passed from observation. In the majority, there was an otitis media hypertrophica; of the cases not improved, one; and of those improved, two were diseases of the labyrinth.

From one to five drops were inhaled at a sitting. The inhalation was continued during the appearance of the usual symptoms (flushing of the face, injection of the bloodvessels of the eye), and suspended on the occurrence of vertigo. In all the cases improved, the tinnitus was increased during the period of inhalation. As the flushing of the face disappeared, the tinnitus diminished and became less than before the administration. In some cases the improvement lasted but one hour; in others, several weeks, but usually from two to ten days. The effect of a second inhalation lasted longer than that of the first application, provided it did not follow the latter too soon; an interval of two days at least must be allowed. The remedy, of course, is not appropriate for acute catarrhal cases, or others in which the tinnitus is evidently of a mechanical origin.—*Chicago Med. Journ. and Exam.*, Apr. 1877, from *Arch. Ophthal. and Otol.*, vol. v. 4.

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An India-Rubber Tracheotomy Tube in the Right Bronchus.

At a recent meeting of the Medico-Chirurgical Society (*Lancet*, April 7, 1877), Mr. Howse reported the case of a man, aged forty-five, who was admitted into Guy's Hospital on Christmas day, 1876. He had been tracheotomized ten years previously for syphilitic disease of the larynx, and had ever since worn a tube, except at irregular intervals. Seven weeks before his last admission, after a longer period than usual without his tube, he had a return of dyspnœa, and had been admitted into the hospital again, when the aperture into the trachea had been enlarged, and one of the new flexible India-rubber tubes had been inserted. After having been taught the management of this tube, he was discharged from the ward. On Christmas-day morning, while endeavouring to remove the tube from the trachea to clean it, it tore across, about one-third of an inch from the shield, and the part in the wound receded deeply into the trachea. Chloroform was given immediately after his admission, and the tube was felt occupying the right bronchus. After various unsuccessful attempts at its removal with loops of wire, the incision was enlarged, and the tube was finally seized and brought out with a long pair of curved forceps. A silver tube was first introduced into the wound; the next day this was changed to a vulcanite one, and shortly after the man left the hospital. Examination of the tube showed it to be quite rotten (seven weeks' wear), so that pieces of the rubber could be readily detached by the finger. A second tube, in a very similar condition to the first, after two weeks' wear, from a child at the Evelina Hospital for Sick Children, was also shown. These cases appeared to prove that it was not safe to entrust patients outside hospital beyond surveillance with a tube *composed of simple red rubber alone*. Since this accident an India-rubber tube had been made which would tend to obviate the risk of such accidents. It had a band of canvas running from the shield down either side of the tube. This rendered the tube *inextensible*, while it maintained its character of *flexibility*. The mere rottenness of the rubber did not suffice to explain the fracture in this case. The man stated that he had not changed it for two or three days, that when attempting to remove it he pulled at the shield, that the tube stuck, and he felt something give; that he pulled a little harder, and then the shield came away with a little of the tube adhering to it, the bulk receding into the trachea. This sticking of the tube was probably explained by the contraction of the cutaneous tissues on the neck of the tube, so that it had produced a slight annular constriction. As an illustration of this condition the first flexible tracheotomy tube, composed of black rubber, made use of at the Evelina Hospital for Sick Children, was amongst the specimens sent round. This showed flattening and apparent constriction of the neck of the tube. It had been worn by a child with congeni-

tally syphilitic disease of the larynx for about a fortnight. On pulling at the shield in such a case, the part of the tube outside the skin would thus become *stretched*, the thickness of the walls would become *attenuated*, and hence there would be predisposition to fracture at this weakened portion. [Diagram shown, illustrating mode of fracture.] The new tube, being inextensible, from the canvas bands contained in its interior, would prevent the risk of such an accident. But even with this tube, when cracks were observed in the rubber, the patient should be cautioned to get a new tube, otherwise the tracheal mucus would penetrate to the canvas and slowly rot it. It was further to be recommended that glycerine should be used as a lubricating agent for these tubes instead of oil, which tended to rot even the best forms of rubber. Glycerine, on the other hand, appears to have very little action on the rubber, or even if it has is so quickly washed away by the tracheal mucus on account of its solubility in water, that it exerts no harmful effect. It had been objected to the view of the sticking of the tube in the wound being due to the contraction of the cicatrix, that it was not possible for a cicatrix to contract in such a way as to have this power. The analogy of a bougie dilating a stricture would undoubtedly tend to support this view, but it was to be remembered that in the urethra there was an epithelial surface, whereas in the tracheal sinus we were dealing with simple cicatricial tissue. The case, too, was one of syphilis, where the tendency to vigorous contraction is universally recognized. Moreover the size of the tracheal sinus seemed disproportionately small to the size of the tube, so that it would have appeared not possible for such a tube to have passed through it. These facts appeared to prove definitely the power of a contracting cicatrix. No other theory accounted for the sticking of the tube.—Mr. MORRANT BAKER said that as he was responsible for the introduction of the India-rubber tube into practice, he would be the first to thank Mr. Howse for placing this case on record. India-rubber was a very treacherous material; it required very careful manufacture, and during its use its condition should be carefully inquired into. Of course all tubes must come to a period when they will be worn out; and only that session Mr. Hulke had related a case in which a similar accident had happened with an ordinary metal tube. But this did not touch the surgical merits of the new form of tube; for although it might last only a few weeks, yet it did not produce ulceration, and the other results of rigid tubes. Improvements in the manufacture of the tubes had been recently made, on the suggestion of Mr. Napier, so as to get rid of brittleness, and by the introduction of canvas between the layers of the rubber, to prevent contractility whilst retaining the elasticity of the tube.—Mr. DONALD NAPIER alluded to the prevailing ignorance as to the nature of the varieties of India-rubber; and maintained that, had a properly manufactured material (such as "No. 1, red") been used, the accident related by Mr. Howse could not have happened. The composition put into the rubber to give it stiffness causes it to deteriorate; and great care also was necessary in the "curing" process, lest the material pass into the hard and brittle condition known as vulcanite. Rubber properly prepared can be made permanently elastic for two or three years. Warne's No. 1 red rubber is the best for surgical purposes. In conclusion, Mr. Napier criticized the explanation given by Mr. Howse as to the *modus operandi* of the contraction of the tube in his case; it was impossible that the tube could be reduced in all its diameters as described; it would be rendered flattened or oval. Mr. HOWARD MARSH said that it was lamentable that tubes should be badly made; but defects due to manufacture were not inherent to these tubes alone. Since Mr. Baker's paper was read, he had been enabled on two or three occasions to contrast the working of the silver and the flexible tubes, and he was more than ever convinced of the superiority of the latter form. Quite recently, a patient presented symptoms of commencing ulceration of the trachea—symptoms which entirely disappeared on the substitution of a rubber tube for the silver one. Nor was there any more difficulty in the management of the rubber tube; it could readily be replaced after cleansing; and the case he referred to had made marked progress. Mr. Marsh strongly deprecated any hasty conclusion being arrived at adverse to the new form of tube. In answer to the President,

Mr. Marsh added that it was usual to substitute the rigid by the flexible tube on the fourth day; the latter form of tube, being less irritating, excited less secretion, and, therefore, called for less frequent cleansing. The reintroduction of the tube was easily accomplished, the wound gaping widely.—Mr. Howse, in reply, said that it had gone forth to the world that the red rubber was quite safe. He was not at all opposed to the use of the tubes; he considered them to be a most valuable invention, but that it was hardly safe to entrust them to patients outside the hospital. He confirmed Mr. Marsh's statement as to the ease with which the flexible tube could be introduced, even in so short a time as forty-eight hours after tracheotomy. But he must defend the view that the simple India-rubber tube is not a safe tube, and surely this was borne out by Mr. Napier himself, in his statement of the extremely delicate processes necessary to secure the best and safest material. It appeared to him that one of the great advantages of the modified India-rubber tube, with canvas inside, over those first brought out, was that the former would not give way at once without warning, whereas the latter, being of the same material throughout, when they become rotten, tear through all at once. In reply to Mr. Napier's criticism of the mode of causation of the fracture of the tube in the case related, Mr. Howse said that the possibility of diminishing the calibre of an elastic tube was capable of perfectly easy demonstration, either by stretching it or by tying a string tightly round it. The latter mode would produce an annular constriction exactly analogous to that which he believed was produced by the cicatrix.

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Radical Cure of Neuralgia of the Lower Dental Nerve.

On July 25, 1876, a woman was admitted into M. Terrillon's ward at the Hospital St. Antoine. Since January, 1875, she had been subject to attacks of neuralgia in the course of the right inferior dental nerve. The least touch, the action of speaking, of carrying a glass to the mouth, of mastication, increased the paroxysms of pain, which radiated along the lower jaw as far back as the ear. The patient, worn out by pain, and eating only with great apprehension, got thinner day by day, and sought assistance from surgery, as she had tried in vain all the medical resources used in similar cases.

The diagnosis was easily established. M. Terrillon was convinced that the neuralgia was simple, *i. e.*, of peripheric origin. There was no cerebral mischief, and pressure on the nerve diminished the pain. The neuralgia was localized to the inferior dental nerve along its course, for the mental nerve was the point of departure of the pain, and the contact of the teeth with cold water and food caused acute suffering. M. Terrillon resolved to divide the dental nerve, after the method of M. Michel, of Nancy, an operation which has for its object the cutting of the nerve before it joins the dental trunk of the inferior maxillary. The patient, not wishing to be rendered insensible, was placed in a chair before a window. M. Terrillon introduced into the mouth a double gag, which, depressing the tongue, gave room and light. A vertical incision, running from the last superior molar to the inferior, divided the buccal mucous membrane as far as the anterior border of the tendon of the temporal. With the finger and a canulated sound a way is made between the internal pterygoid and the branch of the inferior maxillary. After a little time the ridge of Spix,[1] situated at the opening of the dental canal, is felt—the nerve is there, and M. Terrillon proceeds to divide it.

It is impossible, in spite of the employment of sponges and cold water, to see the bottom of the wound. He is prevented from taking up the nerve with a hook, and immediately performing resection, as some authors advise. "Hav-

[1] Spix described and illustrated a point of ossification, forming the internal border of the dental canal. M. Cruveilhier says he has seen in a fœtus of fifty or sixty days a plate of bone which might correspond with Spix's observations, and that the ridge which crowns the dental canal is nothing else but the internal extremity of this plate.—Cruveilhier, *Anat. Descriptive*, tom. i. page 85.

ing, then, my finger on the ridge," says M. Terrillon, "I try with a tenotome to cut the nerve trunk on the inner side of the jaw, but my finger is so fast that I abandon this project, after many trials. The opening of the jaws producing tension of the internal pterygoid muscle, I remove the gag. Then, introducing the finger, I feel that it penetrates the wound more easily. I slide in the tenotome and perform section exactly on the branch rising above the ridge, without going too much in front or behind through fear of embracing the lingual in the section. At the moment of this procedure the patient uttered a slight cry, and a little jet of blood sprung into the mouth." The nerve being cut, the patient felt relieved. The day after the operation it was clear that sensibility to touch, temperature, and to pain was abolished in the whole extent of the region of the chin. The patient left the hospital on August 6th, and was seen by M. Terrillon on November 18th. She had then all the appearance of health, contrasting singularly with her anæmic condition on her entrance to hospital. She declared she had not suffered any pain since the operation.

M. Terrillon offers the following observations and conclusions: (*a*) Section of the inferior dental nerve is indicated in all cases, when the neuralgia lasts many months, when it resists general medical treatment, and when the health of the patient suffers. (*b*) The operation should be performed as high as possible on the course of the nerve; thus recurrence will be less likely. (*c*) The method of Michel, consisting of section of the nerve before its entry into the dental canal by an incision made at the bottom of the mouth, should be preferred. It offers the advantages of not injuring any important part, of freedom against accident, of not leaving any external mark, and of not having been, up to the present, followed by recurrence. (*d*) This operation presents one inconvenience; it is a delicate one with all subjects, and difficult with many; but yet he can always manage to perform section. (*e*) Simple section ought to suffice in the great majority of cases. (*f*) Resection, which does not seem indispensable, still ought to be employed, with the aid of a special hook, when the wound is sufficiently large, and not too dry, so that the nerve can be easily seized.

Will the neuralgia recur? M. Létiévant, an authority in such matters, says in his work on *Nervous Section*, 1873: "A comparison of facts teaches us that recurrence after section of the dental nerve takes place, especially in the first days of the operation; sometimes in the first month, rarely after a longer time." Cures which have passed over the first weeks ought to be considered as definite. In the case of M. Terrillon, the recovery, having now lasted more than four months, ought to be considered as definite.—*Med. Examiner*, Feb. 15, 1877, from *Bulletin de Thérapeutique*, Dec. 1876.

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On Phlegmonous Inflammations of the Carotid Region, and their Treatment.

M. Jacquet (*Thèse de Paris*, 1876) remarks that phlegmon of the neck is an especially grave affection, in consequence of the numerous complications to which it has been observed to give rise.

Sudden death may occur, either from embolism of the pulmonary artery or from cerebral embolism. As the majority of the complications come from the strangulation of the tissues produced by inflammation, from the compression of the vessels, which results from the strangulation, and finally, from the difficulty which the fasciæ oppose to the issue of pus to the surface, it is desirable to give early vent to the pus, and to divide the tissues externally. In this way one will have the opportunity of avoiding vascular disturbances and the diffuse suppuration, which are so grave for the patient.—*London Med. Record*, March 15, 1877.

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On Tracheotomy with Thermo-Cautery.

MM. Poinsot and Mauriac, two surgeons, have successfully employed the thermo-cautery of Paquelin in the performance of tracheotomy (*Gazette Médicale de Bordeaux*, September 20, 1876). The platinum knife of the thermo-

cautery is heated to a dull red, and the three following stages of operation are followed: 1. The skin and superficial cervical fascia are incised slowly from above downwards and with one stroke in the median line of the neck, immediately below the border of the cricoid cartilage. 2. The knife is carried again to the upper part of the incision, and the intermuscular tissue is divided slowly, and with a single stroke, down to the trachea. 3. The point of the knife is carried a third time to the superior extremity of the wound, and plunged perpendicularly in, until the sensation of a resistance overcome is felt. The characteristic hissing of the entering of air is then produced. As soon as the point has penetrated the trachea, the incision must be rapidly enlarged, and the knife withdrawn.

This last stage of the operation requires to be executed with a certain promptitude; for, by leaving too long the blade heated to the point of dull redness in the trachea, there is some danger of cauterizing the lateral and posterior walls, although the radiating power of the platinum is very slight. These three stages of the operation may be executed in less than a minute. It is well, before incising the trachea, to fix the larynx of the patient between the thumb and the index finger of the left hand whilst pressing upon the deep parts; but there is no necessity for denuding and puncturing this tube with an ordinary bistoury, and thus inducing danger of hemorrhage.

This operation, which may be accomplished with a certain rapidity, is not accompanied by any bleeding, and may be easily performed by a surgeon alone, without any other assistance than that of those who keep the child steady.—*London Med. Record*, March 15, 1877.

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Treatment of Genu Valgum.

Dr. Max Schede reports in the *Berliner Klinische Wochenschrif* (No. 52, 1876) four cases of distortion of the leg, treated under antiseptic conditions by excision of a portion of the tibia, and simple division of the fibula by means of a chisel. The patient in the first case was a male, aged twenty-three years, who had had double genu valgum for nearly five years, and had been treated unsuccessfully by ordinary orthopædic appliances. When the case came under the author's care the legs of the patient diverged, so as to form an angle of eighty degrees in the recumbent position, and an angle of ninety degrees when the man was erect. Each lower limb, including thigh and leg, was rotated outwards to a considerable extent. It was at once concluded that in this case no treatment short of osteotomy would prove effectual. Before applying such treatment to his case, the author had to decide which of two methods to select. There was that of the so-called subcutaneous section, much practised by Billroth, and warmly advocated by Gussenbauer, and there was that of the older operation known as Rhea Barton's, which consists in excision of a wedge-shaped piece of bone. The author, whilst acknowledging the greater severity of the latter operation, due to much wounding of the soft parts, and to exposure to the air of a considerable surface of recently divided bone and marrow, decided on this proceeding in preference to the former. It was thought that its ultimate results would be better, and that any immediate risks from the operation might be prevented by the use of antiseptic appliances. In all previous cases in which osteotomy had been practised for the relief of genu valgum, the tibia only, the author states, had been divided, the fibula having been left intact. In consequence of the resistance offered by this bone in attempts to strengthen the limb after osteotomy on the tibia, it was decided to divide both bones. The upper third of each fibula was exposed by a vertical incision between two and three centimetres in length on the outer surface of the leg, the periosteum having been incised in the same direction, and turned forwards and backwards from the outer surface of the bone. The shaft was then cut through by means of a chisel. Over each tibia, an incision was made at the inner surface of the leg at the upper third. Incisions disposed so as to form the letter H were then made into the periosteum; the flaps thus formed were turned upwards and downwards, and a wedge of bone—the base of which had been thus laid bare—

was finally removed from the shaft of the tibia by means of a small and narrow saw. The base of each wedge-shaped fragment of bone was about two centimetres wide. During this operation, which was performed on February 28th, Lister's antiseptic method was closely observed, and each limb remained bloodless through the previous application of Esmarch's apparatus. Before closing each wound, great care was taken to remove any fragments of detached bone. The author insists much upon this detail, and points out that the neglect of such precaution will probably be followed by prolonged and profuse suppuration, and by some necrosis of the cut surface of the bone. After section of the bone in this case the author found much difficulty in straightening the limbs, in consequence of the resistance of the soft parts. In order to prevent any return of the distortion during the after-treatment, each limb was kept straight through lateral extension with weights, and, after the antiseptic dressings to the wounds had been discontinued, through the application of gypsum bandages. The patient, after a mild attack of facial erysipelas, which lasted from the 2d to the 6th of March, did very well. On March 22d, after three dressings to each limb, all the wounds in the left leg were nearly closed. On April 5th, when the cicatrization was complete, all dressings were discontinued, and a gypsum bandage was applied to this limb. In the right leg, however, there was for some time free suppuration from the inner wound, and also superficial necrosis at the cut surface of the tibia. This unfortunate result the author attributed to the presence of a small detached fragment of bone, which had been overlooked at the time of the operation. The suppuration was kept up until the middle of July, but subsequently soon ceased after the removal at this time of a small sequestrum. At the end of September there was firm consolidation of the bones in both the left and the right legs; each limb was perfectly straight, with functions then good, and promising to improve much with renewal of action and power in the muscular apparatus. Considerable distortion of the feet remained after the operation; the phalanges and metatarsal bones being turned inwards to a considerable extent. This deviation had been caused by the attempts made by the patient to place the sole of each foot on the ground whilst he was the subject of genu valgum, and was much exaggerated in consequence of the extreme outward rotation of each limb.

In one of the four cases reported by Dr. Schede, the inbowing at the knee was unilateral, and the result of chronic periostitis of the whole of the right tibia. In the subject of this case, a girl aged fifteen years, the slow inflammatory process had caused not only considerable subperiosteal deposit of new bone, but also very considerable acceleration of the growth of the whole shaft, so that the right measured more than the left tibia by between eight and nine centimetres. As the fibula had not increased in the same manner, the affected tibia became curved with the convexity inwards. The lower articular surface of the bone being no longer directed directly downwards but obliquely outwards, the foot was much distorted. The internal lateral ligaments of the ankle joint had been much attenuated, so that, when the lower extremity was applied to the ground, the foot twisted outwards, and the weight above was supported mainly by the inner malleolus, much pain and trouble being thus caused to the patient, who could not get about except on crutches. In this, as in the preceding case, a wedge-shaped portion of the affected tibia was removed, and a simple linear section made of the fibula; but here the seat of the operation was near the lower end of the limb, and at a distance of three fingers' breadth from the tip of each malleolus. The wounds, made and dressed under antiseptic conditions, closed rapidly and without suppuration. On the twenty-ninth day after the operation there was firm consolidation of the leg bones, and the ultimate results of the treatment are reported as having been completely successful.

The last case described by the author was one of very complex rachitic curvature of both legs in a girl aged twelve years. Each tibia, presenting the most severe form of characteristic rachitic distortion, was flattened in its transverse diameter, and had the form of a sword scabbard. Each bone was also twisted, so that its crest looked inwards, and in addition there was bending outwards of the lower half of the shaft, the convexity of the curve thus formed being constituted by the tibial crest. In order to remove the deformity, and

to improve the much impaired function of the limbs, a wedge of bone, with its base corresponding to the inner and anterior portions of the shaft, was removed from each tibia, and then an attempt was made to rotate outwards the lower fragment of the bone. It was found that this rotation of the lower fragment could not be brought about in either limb, until after division of the fibula by subcutaneous fracture. These bones were found to be very elastic, and did not give way until they had been bent almost at a right angle. The section of each tibia was made at about the middle of the leg, and the fibulæ were broken at corresponding parts.

After this operation, which was performed fourteen days before the publication of Dr. Schede's paper, the wound closed speedily, and the condition of both limbs in this early stage of the after treatment was such as to promise a very satisfactory result.—*London Med. Record*, Feb. 15, 1877.

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On the Healing of Wounds of the Skin.

Dr. HANS VON WYSS (Virchow's *Archiv*, Jan. 1877) describes anew the healing process of superficial incised wounds of the skin. He concludes that—

1. The substance which unites the cut edges of a not penetrating wound of the skin on the first day, consists only of newly formed epithelium.
2. In penetrating wounds of the skin, the newly formed epithelium fills at least two-thirds of its depth.
3. The cell-elements of the true skin do not take part during the first days in the healing process.
4. Inflammation of the skin does not occur after a simple incised wound; it is only the result of accidental irritation, and hinders the proper healing process.—*London Med. Record*, March 15, 1877.

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On Psoriasis of the Tongue.

The following general conclusions are given in a contribution by Dr. NEDOPIL, of Vienna (*Langenbeck's Archiv für Klin. Chir.*, Bd. xx., Heft. 2), on psoriasis of the lingual and oral mucous membrane, and on the relation of this affection to carcinoma:—

"1. Psoriasis of the mucous membrane of the tongue and oral cavity is caused through a chronic inflammatory process, which takes place in the proper mucous layer.

"2. This chronic irritative process results in a new formation of young indifferent cells.

"3. These indifferent cells, which lie near to the epithelial layer of the mucous membrane, are converted into true epithelium; hence results the formation of patches of abnormal, bulky, and rapidly regenerated epithelium.

"4. The epithelial layer of the mucous membrane, as in the normal condition of things, remains quite passive, and takes no part in the regeneration of these patches.

"5. The deeply-seated indifferent cells of new formation are partly converted into shrivelled, scar-like tissue, and partly persist as round cells, which may finally displace the proper tissue of the mucous layer.

"6. These indifferent cells when in the substance of the mucous layer, and before they have attained their ultimate position, may acquire an epithelial character, and thus carcinoma is developed.

"7. When carcinoma—that is to say, an epithelial new growth—is developed from indifferent cells, such a mode of nutrition as is met with at the surface only of the mucous layer under normal conditions of the tongue affects the cells contained in the deeper parts of this layer."—*Brit. and Foreign Med. Chir. Review*, Jan. 1877.

Midwifery and Gynæcology.

Dislocation of the Ensiform Cartilage of the Sternum during Pregnancy.

M. POLAILLON recently related (*Union Méd.*, Feb. 27, 1877) to the Paris Société de Médecine an example of this rare affection occurring in a primipara thirty-five years of age. Her pregnancy went on in the normal condition until the seventh month, she trying to conceal it by wearing very tight stays. At the seventh month, however, without any apparent cause, she felt a sudden and sharp pain at the epigastrium, which, supportable at first, becoming exasperated by the busk of her corset, obliged her to leave this garment off. She also perceived at the pit of the stomach a small movable projection which did not exist there before. The pain persisted until the end of the pregnancy, and was much aggravated by any pressure or contact. It was also increased when the stomach was full and during digestion. During labour it became *atroce*. On examining the epigastrium after delivery, a hard transverse projection was felt at the end of the sternum, of about a centimetre and a half in extent, having a depression just above it, at the bottom of which the anterior surface of the body of the sternum was perceived. On pressing back the skin, the little body could be easily seized, and moved in a vertical direction, and brought forward to the front of the sternum. It evidently consisted of the separated ensiform cartilage, the base of which was carried backwards, while its point carried forwards caused the skin of the epigastrium to project. All attempts at reduction were unsuccessful. Seen two months afterwards, the appendix still retained its abnormal position, having become fixed in this by adhesions, and now causing very little inconvenience.—*Med. Times and Gaz.*, March 24, 1877.

The Employment of the Hand in Rectifying Vicious Presentations of the Head during Labour.

In the *Annales de la Société de Médecine de Gand*, Dr. J. PARIS draws attention to three positions of the fœtal head at the brim which he is in the habit of changing when they are diagnosed: 1. Head extended in all positions; 2. Occipito-posterior presentation; 3. Mento-posterior presentation. He introduces the whole hand, under chloroform, into the vagina, the back of the hand lying in the hollow of the sacrum; the other hand is on the fundus uteri. He seizes the head and raises it; in the first and third cases he only flexes the head more or less. In the second case, the occipito-posterior, the manœuvre is more difficult; the head is seized and raised with the right hand, and an attempt is made to turn the occiput round to the front, whilst the left hand acts on the shoulder, which is in front, and endeavours to push it backwards. Dr. Paris relates a case of mento-posterior presentation, where efforts had been made for an hour to procure rotation without success. He introduced his hand, raised and flexed the fœtal head, and extracted a living child in a few minutes with the forceps.—*London Med. Record*, March 15, 1877.

[The author's views strangely coincide with those advocated by the late Dr. John S. Parry, of Philadelphia (*Am. Journ. of Obstet.*, May, 1875, p. 138).]

Post-Partum Hemorrhage.

In the *Aertzliches Intelligenz-Blatt* (No. 40, 1876), Dr. WETZEL narrates a case where hemorrhage, eventuating in death, occurred in a patient where the uterus was fully contracted. She was aged 26, and this was her third pregnancy. She had lost much blood during the six weeks preceding delivery. The placenta was found to be prævia; turning was accomplished under chloroform, and the child extracted. Hemorrhage continued, although the uterus was firmly contracted. Ergotin was injected subcutaneously, and ultimately cold water into the uterus, but without checking the hemorrhage. The patient died about two hours after her confinement. No *post-mortem* examination was made. The author considers the hemorrhage must have been due to the

bursting of a varix or an aneurism in the uterus; or else some rent in the uterus or cervix, though no evidence of this latter was detected on examination. He doubted whether a tampon with liquor ferri perchloridi would have checked the hemorrhage.—*London Med. Record*, March 15, 1877.

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Extra-Uterine Fœtation; Operation; Recovery.

Dr. D. D. Gilbert reported to the Norfolk District Medical Society (*Boston Medical and Surgical Journal*, March 8, 1877) the following case, which terminated successfully as regards both mother and child:—

The patient was thirty-seven years of age, of nervous temperament, and of small stature. She had previously given birth to three living children. In February, 1876, having ceased to menstruate about the middle of the previous October, she began to experience strange sensations, which led her to suspect that she might be *enceinte*, or that possibly some obscure abdominal tumour might be forming. About the latter part of May she thought she felt a slight motion in what appeared to be a small tumour situated low down in the pelvis. The enlargement of the abdomen was at this time so slight as to be scarcely perceptible, the girth of the waist not being increased at all; nor indeed was there any notable enlargement of this circumference up to the time of delivery. The first examination was made by Dr. Gilbert, June 11th, when the abdomen was found to be the seat of a tumour about the size of an ordinary gravid uterus at the period of five months. This enlargement was evidently formed by the uterus, though situated low down and somewhat to the right. Auscultation gave feeble, but distinct, fœtal heart sounds. The diagnosis of pregnancy was not fully concurred in by the patient, her feelings being, as she asserted, totally different from those of all previous pregnancies. On June 25 and July 2, severe cramping pains were experienced in the abdomen, and these pains thenceforward recurred each night until July 10, when genuine labour pains were found to have set in, the womb contracting with each pain. A vaginal examination, however, gave no other signs of commencing labour; in fact the os and cervix seemed like those of a uterus at the period of six months, while their muscular tissues did not appear to participate in the uterine contractions; nor was there any downward pressure of the fœtus upon these parts with the labour-pains. The pains ceased at this time, but returned upon the 11th with increased violence, but still different, she maintained, from any experienced in former labours. A vaginal examination revealed an undilated os. When, however, the finger was swept round the outside of the cervix, the right side was found to be enlarged, and communicated the sensation of a fœtal head within the womb. Within the cervix, the finger passed unhindered into the uterine cavity. The tissue lining the left of the organ seemed to the touch almost like that of non-gravid uterine tissue; upon the right side, just within and at the edge of the os, a fœtal head could be distinctly felt, covered by a thin mucous membrane, which seemed to participate, in a degree, in the uterine contractions that were going on. There remained, therefore, no doubt as to the existence of interstitial pregnancy. Deeming the condition of affairs at this juncture too critical to justify any delay for consultation, Dr. Gilbert took a "Miller's uterine scarificator," and passing it along the finger within the cervix carefully divided, by an incision about one inch long, the septum between the vicarious and true uterine cavity. The operation was attended with slight hemorrhage, and the pains soon began to diminish in severity, until, at the expiration of an hour, the patient was quite comfortable, and passed a quiet night. The next day, the unruptured membranes inclosing the fœtal head were found presenting at the os, as in normal labour, but there were no labour-pains. At five P. M. upon the day following, July 13th, the pains were renewed and progressed naturally, terminating at eleven A. M. in the birth of a poorly nourished child, weighing four pounds. At the end of six weeks this child died from inanition. The liquor amnii was quite scanty; the placenta and cord presented nothing abnormal. The mother made a good recovery at the end of five weeks. The mammary secretion was entirely absent. Menstruation was

renewed in about three weeks after confinement, and there has since been but slight hemorrhage from the bowels.

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Local Treatment of Puerperal Fever.

Starting from the standpoint that the febrile affections which follow parturition, and which are generally comprehended in the expression "puerperal fever," are due to the introduction of septic matter from without, and only acquire their specific character from their seat of origin, and from the peculiar condition of the generative organs existing at the time, Dr. HEINRICH FRITSCH, of Halle,[1] recommends the systematic adoption of certain antiseptic measures, not with a view to prevent infection by the hand of the accoucheur or midwife, but also to remove and destroy any decomposing secretions which may develop in the uterus itself. In the first place, before any examination is made, the hands are to be well washed with soap and then scrubbed with a nail-brush and a solution of carbolic acid. The most convenient arrangement for preparing this solution is to have a number of thirty-grammes bottles filled with concentrated carbolic acid dissolved in glycerine (thirty grammes acid to three glycerine), and to take one or two in the pocket when called to a midwifery case. By measuring out a litre of water into a basin, and adding the contents of one bottle, a solution of a proper strength is at once ready for use. Any instruments that have to be applied must also be previously disinfected. Instead of ordinary oil, carbolic oil must alone be employed to grease the hands and instruments. The patient herself is, if possible, prepared by a sitz-bath, in which the vulva and perineum are carefully cleansed with soap. The vagina is then washed out with carbolic acid solution, with the remainder of which the vulva is washed for the second time, and any incrusted hairs are, if necessary, removed with the scissors. Contrary to what might be theoretically expected, the injection of dilute carbolic acid into the vagina does not render the parts either rigid or rough, and the finger can scarcely distinguish between their condition before and after the irrigation. After the birth of the child, attention must especially be directed to maintaining a free escape for the lochia. In the ordinary position of the patient, with the buttocks slightly depressed below the level of the surrounding portion of the mattress, the lowest part of the hollow of the sacrum is lower than the posterior commissure, so that liquid has to collect and rise to a certain level before it can escape outwards. Hence, a greater or smaller quantity will always remain behind if nature be left to herself, and may thus set up decomposition in the secretions which escape from the uterus later on. Moreover, the lochia tend to escape at the upper part of the vulvar aperture, and not at the posterior commissure, owing to the way in which the labia overlap and become adherent to one another, so that a considerable quantity of fluid may be retained in the vagina, and there undergo those changes which are so liable to give rise to septic infection. On these and other considerations Dr. Fritsch founds his method of vaginal and uterine irrigation, which consists in injecting a 2 per cent. solution of carbolic acid (salicylic acid has been found to be too feeble an antiseptic), at a temperature of 88° Fahr., into the generative cavity by means of an irrigator containing at least a litre (two pints) of liquid. The instrument must not be raised higher than one and a half to two feet above the patient's body, and it may be necessary to use two or three litres of the solution before the liquid returns completely colourless. For the injection of the uterus, Fritsch finds the best form of catheter is one made of German silver, thirty centimetres long and six centimetres in circumference (to be obtained from Baumgartel, of Halle), and which has a curve somewhat greater than the midwifery forceps. In those cases in which there is slight difficulty in introducing the catheter, there is the greatest probability of the retention of fluid in the uterus, owing to kicking from anteversion of the organ. The introduction of the catheter must be invariably controlled by the finger in the vagina. The ordinary dangers which are supposed to result from post-partum digital

[1] Volkmann's Sammlung Klinischer Vorträge, No. 107, "Ueber das Puerperalfieber und dessen locale Behandlung."

examination are prevented by the presence of the antiseptic, and the finger is able to detect and to loosen adherent clots, which irrigation alone has not force enough to detach, and which might become sources of putrefaction and infection if allowed to remain. Dr. Fritsch ordinarily irrigates three times a day, at six, one, and eight o'clock; while the vagina is washed out by the nurse every three hours. While vaginal irrigation should be a *sine quâ non* in the after-treatment of every parturient woman, Dr. Fritsch limits the irrigation of the uterus to cases where an operation has been performed, especially where the fœtus was dead and decomposed; to cases in which liquor ferri perchloridi has been injected into the uterus to arrest hemorrhage, and in which the formation of clots is an essential concomitant of the treatment; and lastly, to cases in which fever has existed for several days when the practitioner is called in (as may be the case when the woman has been delivered by a midwife), provided the lochia are still present.

The advantages derived from irrigation under such circumstances may be summed up as follows: 1. After one or two injections the vulvar aperture ceases to be painful and tender, even though it may have undergone considerable laceration; the introduction of the finger becomes painless, œdema rapidly subsides, and wounds heal without the formation of a definite granulating surface. 2. The lochial discharge rapidly diminishes in quantity, the only exception being when irrigation is used after the injection of perchloride of iron into the uterus their prolongation being here probably dependent on the destructive action of the perchloride on the tissues of the uterus, so that a considerable period must elapse before the whole of the sloughs are thrown off. 3. The uterus undergoes involution quicker than under expectant treatment. 4. *The temperature falls after the first injection.* The influence of irrigation on the pulse is less marked, especially if there has already been severe hemorrhage or fever of several days' duration. By this method Dr. Fritsch had succeeded in saving severe cases of puerperal fever in which the first injection was made on the fourth to the sixth day after delivery, with a temperature of 40° Cent. (104° Fahr.) or higher; and his experience as assistant for many years in the obstetric clinic at Halle is sufficient guarantee for his statement that these cases were really of the most serious kind. The irrigation of the uterus must be continued for at least five days, or in any case until the complete cessation of febrile symptoms. As a rule, Dr. Fritsch irrigates the uterus for the last time on the second evening on which the temperature remains normal, but the vaginal injections are continued for another week, as occasionally fetid lochia and a return of fever have been observed when they have been left off too soon. There need be no fear that pain or secondary hemorrhage will be excited by irrigation; practically, they are not found to occur. The patients themselves make no objection to the treatment, provided the medical attendant explains to them its object. Collapse only occurs where there has been much loss of blood or several days of fever, and in such mainly when the liquid has been injected too cold. In carrying out the method much will depend on the tact and care of the medical man. A few spoonfuls of wine may be given before and after the injection. Internally it is well to give quinine. Salicylate of soda in such small doses as two grammes administered in the course of four hours caused so much delirium and collapse in women after child-birth as to deter Dr. Fritsch from repeating its use.

We have entered at some length into the details of the above method because it seems to us to mark a distinct advance in obstetric surgery, and to hold out a real hope of success by taking advantage of a rational indication for the prevention, and even the cure, of puerperal fever, where the use of other remedies has as yet been scarcely more than empirical and unscientific. If the great "peril of child-birth" can be lessened by means so simple, the introduction of antiseptic midwifery will be a boon indeed. The need is pressing, for every year many a young wife and mother is snatched away, the victim of puerperal infection.—*Med. Times and Gaz.*, Apr. 7, 1877.

On the Treatment of Obesity and Amenorrhœa of Young Women by Milk-Diet.

M. TARNIER (*Journal de Méd. et de Chir. Pratiques*, 1876) was consulted some time ago by a young woman who was suffering from albuminuria. She was very fat, and had not menstruated for several months. He ordered only the rigorous employment of a milk-diet. Some months later he saw her again, and found her quite slender in form, and presenting all the appearances of health. She had followed his directions to the letter, and the amelioration of her symptoms had been rapid. First the albumen disappeared from the urine, and then the precocious obesity disappeared. Menstruation was gradually re-established as she grew thin, and her periods had begun to occur at normal intervals.

Shortly afterwards, M. Tarnier ordered milk-diet to a young woman who was very obese, and in whom there was absolute suppression of the menses. She had no albuminuria. The patient lost flesh rapidly, and menstruation was perfectly re-established.

Milk-diet must be classed among the alterative medications, but it has the advantage of being well borne by the stomach and of not disturbing the general health. In treating albuminuria with milk M. Tarnier orders for the first day, one quart of milk with two portions of food; for the second day, two quarts of milk and one portion of food; for the third day, three quarts of milk and one portion of food; for the fourth day and afterwards, four quarts of milk and no food at all. In the treatment of obesity, it is not necessary to adhere so rigorously to the milk-diet; a small quantity of ordinary food may be allowed. The patient may take the milk in such quantities and at such times as she likes, provided she takes the prescribed quantity *per diem*. The duration of the treatment will vary in different cases. If diarrhœa set in, it is a sign that the treatment is not well borne. When the desired effect begins to show itself, it continues even after the treatment is suspended.—*London Med. Record*, March 15, 1877.

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Chromic Acid in the Treatment of Ulcerating Granulations of the Os Uteri.

In the *Annales de la Société de Médecine de Gand*, M. KŒBERLE prefers chromic acid as a cauterizing agent to the other remedies usually used, as pernitrate of mercury, iodine, nitrate of silver, and the actual cautery. He uses it in the crystalloid condition. It is a very anhydrous substance, and readily absorbs the moisture from the tissues which it may touch. M. Kœberle applies it through an India-rubber speculum on a tampon of cotton-wool. Vomiting often supervenes within fifteen or twenty minutes from the application of the acid. When the tissues are seriously altered, it is necessary to repeat the cauterization, but M. Kœberle has hitherto found three applications to suffice. After the application he applies a tampon, and advises the patient to use two soap-and-water injections daily. He treats all ulcerations of the os in this way, as in epithelioma.—*Lond. Med. Record*, March 15, 1877.

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On Uterine Fibroma.

In the *Medicinisch-Chirurgisches Centralblatt* for November 17, 1876, Dr. EDWARD FISCHER relates the case of a patient, aged 40, who came under his care for menorrhagia. Hemorrhage recurred every second or third week, and was profuse but free from clots. The patient was reduced to a weak condition; but, as there was no hemorrhage in the intervals of the apparent periods, and no other abnormal discharge, the author regarded it as probably connected with approach of the climacteric. For more than a year he treated the case by internal remedies and by ordering vaginal injections of perchloride of iron, without making a pelvic examination. At length the patient became so ill as to be unable to leave her bed, and the discharge became offensive. By vaginal touch the os uteri was then found to be soft and patulous, and a smooth irregular body, as large as a nut, round which the finger could be passed, was felt

within. The body of the uterus was felt as large as a man's fist, and inclined to the right side. After administration of ergot for five days, the os became dilated, and a large tumour was forced into the vagina. The patient suffered severe pains, and appeared almost moribund. On the eighth day, the tumour was seen to protrude at the vulva, its lower extremity being gangrenous. A few hours later, it was found lying outside the vulva, being as large as two men's fists, and attached by a pedicle about the size of a vaginal speculum. Not venturing yet to interfere with the knife, Dr. Fischer still left the case to nature. After three days, however, the whole tumour had become gangrenous, but did not separate. He therefore put a ligature round the pedicle and cut it off. It had a fibroid structure, and weighed 3½ pounds. The ligature came away in a few days, but the pedicle after some weeks began to increase in size, and caused distress by pressure upon the orifice of the urethra, and projected outside the vulva. Traced upwards it became narrower, and where it escaped from the os uteri, it was about the size of the little finger. A ligature was then placed round it as high up as possible, and the remainder cut away. The patient after this began at once to improve, and was soon convalescent.—*London Med. Record*, March 15, 1877.

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On Total Extirpation of a Cancerous Uterus.

In the *Allgemeine Wiener Medizinische Zeitung* for September 26, 1876, Professor HENNIG, of Leipzig, relates a case in which he removed the whole uterus through the vagina, on account of cancer of the cervix. The patient was 45 years old, and was suffering severe hemorrhage. She had been twelve times pregnant, but only once went to full term. The operation was performed in the lithotomy position, the emptied bladder being drawn forward by a catheter. After separating the uterus by the knife from its attachment to the anterior vaginal wall and the bladder, Dr. Hennig endeavoured to shell it out of its peritoneal covering without opening the peritoneal cavity, an operation which he had successfully performed upon the dead subject. This did not succeed, on account of adhesions, the result of old pelvic peritonitis; but the uterus, including its peritoneal covering, was shelled out of its adventitious capsule. A knot of cancer was found to involve the recto-vaginal septum, reaching the rectal mucous membrane. In removing this, the rectum was laid open, the aperture being afterwards closed by sutures. The uterus was found to measure more than five inches in length; the left ovary and Fallopian tube, closely adherent to it, were removed with it. The hemorrhage was checked by the insertion of ice. Some signs of peritonitis followed, and on the fifth day the temperature reached 105° Fahr.; but, after an evacuation of the bowels through the recto-vaginal fistula, the symptoms subsided. Four weeks after the operation, the margins of the fistula were vivified, and sutures inserted, with much difficulty. Two months after the operation a swelling appeared in the right inguinal region, which proved to be an abscess, and was opened near Poupart's ligament. Six months after the operation, a knot of recurrent cancers, readily bleeding, was found near the site of the fistula. This was excised. At the date of the report, eight months after the operation, the patient was in improved health, and the fistula was reduced to a small size, not allowing any solid matters to pass.—*London Med. Record*, March 15, 1877.

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On the Relief of Pain in Carcinoma Uteri.

The subject of the various forms of cancer must always be an anxious care to medical men, inasmuch as the pain in most cases is of such an intense kind that death is welcome to the patients to relieve them of their agony. Considering the great importance of relieving pain in cases where we cannot hope to do more, Dr. A. E. AUST-LAWRENCE, Physician-Accoucheur to the Bristol General Hospital (*Medical Times and Gaz.*, March 24, 1877), has given most remedies a trial; and it is with the object of bringing some of them more prominently before the profession that he is induced to pen a few lines on the subject.

"I have, unfortunately, generally under my care in hospital and private practice about from twenty to thirty cases of cancer of the uterus, vagina, or rectum; and the experience of the past twelve months has led me to rely, to a great extent, on the following treatment for the relief of pain: In cases of medullary cancer of the uterus, and also of advanced epithelioma in the same region, I have been struck with the marked relief often derived from the administration of ergot, in doses of thirty minims every six hours. There is a relief from the intense throbbing which, as a rule, only subsides with each attack of hemorrhage, which of course brings with it great exhaustion. I consider the ergot acts in the ordinary way, by lessening the amount of blood in the uterus; and it may also check, to a slight extent, the rapid breaking-down of the affected part. A case of medullary cancer in a young woman, thirty-one years of age, was rendered very much less painful by ergot than by any other remedy which was tried. I have a case now under my care of sarcoma of the uterus, the pain of which is very much relieved by full doses of ergot.

"Another drug I have found of great value is croton chloral hydrate. This, in my experience, has not very much power to lessen the pain at the seat of the cancer, but it is very valuable in lessening the reflected pains in the back, thighs, and groins; and this it has done in several of my cases to a very marked degree. As a local remedy I have found carbolic acid very valuable. I apply it full strength by means of a little piece of cotton-wool through a very small speculum to the cancerous surface, and then order a lotion with one drachm of the glycerini acidi carbolici to half a pint of water, to be used as an injection night and morning. I have found this drug, used in the way I mention, of great value.

"Of course other drugs suggest themselves to every one, such as opium, Indian hemp, bromide of potassium, etc.; but what I wished to show is that ergot is a very valuable agent in helping to control pain in these cases, that locally I have had better results from carbolic acid than from anything else. I might also add that a very valuable way of relieving pain in these cases is by small blisters in the groins, dressed with an ointment containing morphia."

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Results of Ovariotomy in London Hospitals.

On March 14, Mr. SPENCER WELLS performed ovariotomy on two patients in the Samaritan Hospital, and made some remarks upon the results of that operation in the Samaritan as compared with those in some of the large general hospitals of London, and in the Hospital for Women in Soho Square. In 1867, tables were published showing that, while in the Samaritan Hospital the mortality was 23 per cent., and in the Hospital for Women 41 per cent., in Guy's Hospital it was 52, and in five other large general hospitals 76 per cent. At a recent meeting of the Royal Medical and Chirurgical Society, doubts were raised whether this diversity in results still existed; and an attempt has been made, by private application and by searching through published volumes of Hospital Reports, to ascertain the truth. From the Hospital for Women no report has been as yet received; but the following table Mr. Wells said, he believed, would represent the result of ovariotomy for the last nine years in four large hospitals and in the Samaritan.

	Cases.	Recoveries.	Deaths.	Mortality per cent.
Guy's	82	39	43	53.24
St. Bartholomew's	21	8	13	61.90
St. Thomas's	29	13	16	55.17
St. George's	11	3	8	72.72
Samaritan	296	230	66	22.29

Mr. Wells added that, when these results were known, he believed, not only that the larger hospitals would be encouraged to do all that could be done by efficient sanitary precautions, separate rooms, specially trained nurses, and careful attention to every detail likely to assist in insuring greater success in the future in their cases of ovariotomy, but that similar care bestowed upon

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THE MONTHLY ABSTRACT
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Anatomy and Physiology.

On some Phenomena connected with Vision.

Mr. B. THOMPSON LOWNE has lately published some careful experiments bearing on, 1. The physiological effect of ruled surfaces; 2. The time required to produce or obliterate a retinal image; 3. The relation of the foregoing observations to Fechner's Law.

Respecting the physiological effect of ruled surfaces, Mr. Lowne, being of opinion that an investigation of the relation of the shades produced by ruled surfaces, as in engravings, with those of variations in the intensity of illumination in shadows, would illustrate the physiological action of light upon the retina, examined a number of wood-cuts and engravings, and found that there are usually about nine different shades, exhibiting a regular series from white to black, and assumed that the nature and intensity of the illumination being constant, the intensity of the sensations produced by a given surface is directly as the number of the retinal elements stimulated.

With the view of determining the effect of variations in the intensity of the stimulus, Mr. Lowne repeated Lambert's experiment, adding a wood-cut in which he had previously determined the ratio of white and black, and found that the apparent illumination, measured by a reference to a ruled surface, varied inversely as the distance of the source of light. In support it was deemed necessary to prove that a distinct picture of the lines falls upon the retina, and that, when a perfect picture is not obtained, the surface appears fainter in shade. This was accomplished by regarding a ruled surface slightly out of focus, or with an astigmatic eye, when a proportionate lightness of tone was manifest. This is illustrated by a carefully ruled diagram.

In examining the time required to produce or obliterate an image in the retina, Mr. Lowne, doubting the results arrived at by M. Delbœuf, since in his experiments with revolving disks the rate of rotation was neglected, repeated the experiments, using a disk six inches in diameter, kept in rapid rotation by clockwork.

He concludes that with a dull light a white streak on a black surface must occupy the same position for about 1-5000th of a second to be seen at all; but the time varies inversely as the square root of the illumination. A black spot upon a white ground must rotate much more slowly to be seen, in consequence of the faintness of the after image.—*London Medical Record*, April 15, 1877

Materia Medica and Therapeutics.

Glycerine.

M. CATILLON communicated to the Academy of Sciences, Paris, his researches on the physiological and therapeutic properties of glycerine. He obtained in guinea pigs an increase in the body-weight under the influence of

50 centigrammes of glycerine injected daily. 1. This substance diminishes the combustion of fats and nitrogenized substances, whilst favouring the phenomena of nutrition. 2. The diminution of urea in the human subject has been ascertained to be from 6 to 7 grammes *per diem* under the influence of 30 grammes of glycerine diluted with from 8 to 10 parts of water, and taken in three doses before meals. A larger dose did not produce a greater diminution in the excretion of urea. M. Catillon had not been able to make a comparative estimate of the amount of urea passed in twenty-four hours; he had only been able to decide that the proportion in the urine was very small after the administration of glycerine. 3. Glycerine favours assimilation, by exciting the appetite and promoting the regularity of the digestive functions. 4. The urea contained in the blood of dogs submitted to the administration of glycerine is also lower than the average, which proves that the effect of this substance is to diminish production, and not to place any obstacle to the elimination of the urea. 5. The urine is one way of eliminating the excess of glycerine, and it begins to show itself in man when the dose taken exceeds 20 grammes; after a dose of 30 grammes, M. Catillon had found from 3 to 3.50 grammes, and from 12 to 14 grammes after a dose of 60 grammes. 6. No glycerine was found in the perspiration. 7. No glycerine was found in the feces, whatever dose was taken. 8. Glycerine does not remain in the blood. M. Catillon sought for it one, two, and three hours after very large doses had been taken, without being able to obtain any appreciable quantity. It must be almost entirely burned in the blood, to the same extent as it penetrates it, for it is totally absorbed, and only a relatively small quantity is found in the products of excretion. 9. A notable diminution of the proportion of sugar was found in the blood of dogs submitted for long together to the influence of glycerine. But this influence of glycerine only seems to be exerted after ultra-therapeutic doses; and M. Catillon was inclined to believe that the explanation of the favourable effects which glycerine may produce on diabetic patients, must be sought in its action on the production of urea, and on the digestive functions. 10. M. Catillon has never found either sugar or albumen in the urine after the administration of glycerine in any dose whatsoever. 11. Glycerine possesses decided laxative properties; a dose of 15 or 30 grammes induces, if taken into the stomach of an adult, an easy and soft motion; sometimes, too, the laxative effect does not increase with large doses administered all at once. 12. Glycerine, introduced into the stomach in large quantities, may act in two completely different ways, according as it is taken, in single large doses, or in repeated small doses. In the first case, when the proportion of 15 grammes to the kilogramme of the body-weight is reached, fatal accidents may supervene, and lesions comparable to those of acute alcoholism are found. In the second, on the contrary, no symptom but a rise in the temperature is manifested. 13. According to Nos. 2, 5, 11, it would appear that the rational dose of glycerine is from 15 to 30 grammes a day, if its functions for the restoration and regulation of the digestive functions are to be utilized. A dose of from 40 to 60 grammes, taken at once, may produce slight irritation of the kidneys and bladder. If we wish to give larger doses, as Dr. Harnach does in the treatment of diabetes (180 to 360 grammes), it is important to divide them so that they may be tolerated. These large doses do not appear to offer any advantage, and they bring on intestinal disturbances. They cause no other inconvenience; on the condition, however, that a quantity equivalent to 15 grammes to the kilogramme of the body-weight be not taken at once. —*London Medical Record*, April 15, 1877.

On Iodoform Pencils.

In the case of superficial ulcerations, M. GALLARD, physician to La Pitié (*Paris Médical*, Feb. 15, 1877), introduces a pencil of iodoform into the cervix, and maintains it there by a plug of wadding. To prepare these pencils, powdered iodoform is made into a paste by means of mucilage. Cylinders are made four centimetres (about one inch) in length, each containing one gramme (15½ grains) of iodoform; they are dried in the air, and preserved in a bottle kept from the light.—*London Med. Record*, April 15, 1877.

Pharmaceutical Preparations of Cicutine.

The following formulæ for the administration of cicutine appear in *Progrès Médical*, March 10, 1877, from Bouchardat's *Annuaire de Thérapeutique*. For hypodermic injection: ℞. Hydrobromate of cicutine (crystallized), ½ gramme; alcohol, 1½ gramme; laurel water, 23 grammes. For administration by the stomach the remedy may be administered in syrup, granules, or solution, thus —Syrup: ℞. Simple syrup, 999 grains; crystallized hydrobromate of cicutine; 1 grain. Granules: ℞. Crystallized hydrobromate of cicutine, 2 grains: milk, sugar, and syrup sufficient for 1000 granules. Solution: ℞. Crystallized hydrobromate of cicutine, 0.3 gr.; mint-water, 50 grs.; distilled water, 250 grs. Hydrobromate of cicutine has no disagreeable taste, and children take it easily. —*London Med. Record*, April 15, 1877.

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On the Employment of Croton Oil.

At the meeting of the Society of Practical Medicine in Paris, Jan. 4, 1877, M. Limousin read a communication on a new method of using croton oil. The object of the procedure is to avoid the diffusion of the croton oil, which always takes place when it is applied in a liquid state, and consequently to better limit its action. To attain this result, the croton oil is mixed with cocoa-butter and white wax, in the proportions of two parts of the oil and one of each of the other substances. In this manner points or suppositories are obtained, which may be applied to the parts of the skin which it is desired to irritate. The principal advantage of this proceeding is to localize exactly the artificial inflammation produced by the croton oil. M. Ladreit de Lacharrière had first used these points for the treatment of tinea at the deaf and dumb establishment. M. Lattier had also tried it at the St. Louis Hospital, and he appeared to have obtained good results with it in the treatment of tinea tonsurans.—*London Med. Record*, April 15, 1877.

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Physostigmine as an Antiseptic.

Dr. L. von Wecker has lately made some highly interesting researches into the nature and action of sulphate of physostigmine, a remedy which has proved of the greatest importance in ophthalmology. He publishes the details in Dr. Zehender's *Klinische Monatsblaetter für Augenheilkunde* (Feb. 1877), and speaks principally of the antiseptic properties of the drug. There are three special cases in which this substance is used with advantage, viz, (1) in widely-spread ulcerated abscesses of the cornea; (2) in ulcus serpens; (3) in suppuration supervening upon operations for a cataract. The effect of physostigmine in these cases is extremely favourable, and, according to the observations of Dr. von Wecker, far surpasses the present methods of treatment. He used a solution of the sulphate, containing one per cent. of the substance, and applied it hourly, or half hourly. It must be remarked that the solution, which when freshly prepared is perfectly clear and of slightly yellowish tint, turns red and dim after twenty-four hours in summer, or after two or three days in winter, and that this change denotes that it has become weaker, and therefore useless. In the April number of the same journal, Dr. H. Schmidt-Rimpler reports upon some experimental investigations he made with a view to determine the antiseptic action of physostigmine, as compared with that of the stronger disinfectants, such as chlorine water, carbolic and salicylic acids, etc. He naturally found its action to be weaker than that of the others, although in the description of his experiments there is sufficient evidence to corroborate Dr. von Wecker's views on its use.—*Med. Examiner*, April 26, 1876.

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On Local Anæsthesia by Bromhydrate of Quinine.

Dr. Thaon (*Nice Médicale*, January, 1877) has observed a case of intermittent fever which resisted the administration of bromhydrate of quinine adminis-

tered internally, or by the hypodermic method. Eighty centigrammes, and even one gramme, were given in this way for several days without destroying the fever; but one of the punctures made on the forearm towards the external border, at four finger-breadths below the elbow, and probably at the level of one of the anterior branches of the musculo-cutaneous nerve, produced complete anæsthesia of the skin over a spot nearly five inches long by two and a-half inches in breadth. The loss of perception of heat was somewhat more extensive. One month after the puncture, this anæsthesia remained almost as considerable as at the commencement. Dr. Thaon thinks that some application may be made of this fact to the treatment of neuralgia.—*London Med. Record*, April 15, 1877.

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Scientific Hydropathy.

Dr. SCHULLER, who formerly investigated the influence of drugs on the vessels of the brain (*vide Med. Times and Gaz.*, vol. ii. 1874, p. 665), has again published a long essay in the *Deutsches Archiv für Klin. Med.*, xiv. page 566, in which the effect of the application of cold and heat to various parts of the body upon variations in the size of the vessels of the brain is treated experimentally. The animals used were rabbits, which were carefully trephined, so as to expose the dura mater without injury to the vessels. On one side of the body the cervical sympathetic nerve with its superior ganglion was removed. Under these circumstances the direct application of ice to the dura mater caused considerable contraction of the vessels, which was, however, much less marked on the side on which the sympathetic was removed than on the other. Cold applied to the abdomen immediately caused dilatation of the vessels on the uninjured side, but usually no alteration at all on the other. Warm moist compresses, on the other hand, when applied to the abdomen, caused contraction of the vessels; and the action of warm baths was as nearly as possible the same. Both cold and warm water caused dilatation of the vessels when injected into the rectum. When the animals were "packed" in wet compresses, after the hydropathic method, the sopor which was induced was accompanied by gradual contraction of the vessels. If the animals were curarized, the only difference observed on the application of heat or cold as above described was that the dilatation of the vessels of the brain was less intense. Division of the spinal cord at the level of the second cervical vertebra was followed by considerable dilatation of all the vessels of the pia mater, which ceased any longer to be affected by heat and cold. The immediate application of cold to the trunks of certain cutaneous sensory nerves which were laid bare in the dorsal region caused contraction of the vessels of the pia mater on the same side; and, on the other hand, warmth applied in the same way dilated them. The fact that the pressure of blood in the carotid artery, as measured by a manometer, was much raised by the application of cold water to the abdomen, and diminished by warm compresses similarly used, has led Dr. Schüller to conclude that the alterations in size of the vessels of the brain are chiefly dependent on the enlargement or contraction of the vessels of the skin; that is to say, the more the latter dilate the more the former contract, and *vice versâ*. The reflex influence on the vessels of the pia mater of the stimulus of heat or cold, applied to the cutaneous nerves, appears to be of subordinate importance in producing these phenomena, and tends to arrest rather than to promote them. The influence of the cardiac and respiratory movements on their production is also an indirect one, and seems sometimes to increase them, and sometimes to diminish them.

With regard to the therapeutic use of heat and cold applied hydropathically to the human subject, Dr. Schüller draws the following conclusions from his experiments: They may be employed (1) to restore their normal tone to the bloodvessels, and especially to those of the brain; (2) as a means of restoring a normal circulation of blood and lymph in the brain; (3) to diminish congestion of the brain; (4) to restore the normal nutrition of its nervous elements; and (5) to renew normal relations of a reflex nature between the brain and the cutaneous nerves.

Dr. Schüller's essay, though disfigured by hyper-enthusiasm in favour of hydropathy, and by a fastastic use of italics to enforce his opinions and conclusions, is still worthy of attention and respect, and we are glad to be able to call the attention of the German readers to it.—*Med. Times and Gaz.*, April 28, 1877.

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On Subcutaneous Injection of Ether in collapse.

The following cases, in which hypodermic injection of ether was employed, occurred in the practice of M. VERNEUIL at La Pitié (*Journal de Médecine et de Chirurgie Pratiques*, March, 1877). A young boy, on whom M. Verneuil had operated for naso-pharyngeal polypus, the operation being a long and difficult one, suffered a considerable loss of blood. The child, enfeebled by successive hemorrhages, fell into a state of severe collapse, his temperature being below 95 deg. His state was so critical that M. Verneuil was asked by his pupils to perform transfusion. Not being a great upholder of this operation, however, he determined to try hypodermic injections of ether, fifteen drops at a time. Several injections having been made in the course of the day, the temperature was seen to rise rapidly; and the following days, the same treatment being continued, the temperature promptly returned to the normal. The patient recovered. Another case was one of strangulated hernia. The temperature had fallen to about 95 deg.; and, in order that the operation might not be performed under such unfavourable conditions, M. Verneuil advised subcutaneous injections of ether in a similar manner. Under its influence, the temperature the same day rose to 97 deg., and made the operation possible.

With regard to the method of using ether, and the dose, M. Verneuil advises the surgeon to go about it with the thermometer in one hand and the syringe in the other. He might commence, for instance, with fifteen drops, and repeat it in an hour, taking care to ascertain the temperature. If this be not sufficient, the injection may be made as many times as is necessary, the ether being apparently well borne.—*London Med. Record*, April 15, 1877.

Medicine.

On Hydræmia and Hydræmic Œdema.

Professor JULIUS COHNHEIM and Herr LUDWIG LICHTHEIM have made (Virchow's *Archiv*, January, 1877) a very interesting series of experiments on animals, with the intention of throwing light upon these clinical phenomena. The result of their experiments is that they were unable to produce œdema of the subcutaneous connective tissue by any quantity of fluid injected into the vessels; the fluids varied from distilled water, salt and water, sugar solution, to blood-serum, albumen solution, and pure blood; they also thinned the blood of some animals without adding to its total quantity of fluid. In the last case the result was quite negative as far as œdema was concerned; in all the other cases the effects were to cause great transudation into the intestines and the cavity of the abdomen, to increase the urine greatly, which was clear and pale; to cause enormous secretion from all glands and from mucous surfaces, the glands and mucous membranes becoming swollen; the flow from the thoracic duct was greatly increased, but the lymph vessels of the extremities showed scarcely any more than their normal quantity; but that of the lymphatics of the neck was increased, though not so much as in the thoracic duct. The injection of fluid had only a temporary influence on the blood pressure in both veins and arteries, but caused a quickening of the circulation of longer duration.

They observed that although hydræmia *per se* appeared unable to produce œdema of the subcutaneous connective tissue, the dogs rendered artificially hydræmic were especially prone to œdema from slight causes, such as painting with iodine, or exposure of their shaved skin to the sun's rays; ligature of the femoral vein scarcely ever caused œdema of the foot in healthy dogs, but under these pathological conditions it very frequently ensued.

They infer from this that changes in the vessels are necessary coexisting factors with hydræmia in the production of dropsy of the subcutaneous connective tissue; and they instance scarlatinal dropsy, in which an alteration in the vessels of the skin coincides with a hydræmia produced by the kidney affection, while in some cases the œdema occurs without any kidney-mischief, scarlatinal dropsy without albuminuria. They believe that the œdema occurring in phthisis, carcinoma, and other cachectic diseases, supervenes when the walls of the vessels have undergone changes corresponding to the general atrophy of the tissues from the malnutrition of the individual.—*Lond. Med. Record*, April 15, 1877.

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Second Attacks of the Acute Exanthemata.

Dr. HUTTENBRENNER, of Vienna, in some remarks (*Jahr. f. Kinderheilkunde*, Bd. x, 3 u. 4 H.) concerning second attacks of the acute exanthemata, especially scarlatina, says: That the assertion that an individual has suffered from two or more attacks of one and the same exanthem is not specially believed in, arises from the fact that, with the exception of smallpox, no objective signs are left behind. Measles and scarlatina leave no lasting trace behind them, and after a proportionally short time has elapsed one has no absolute proof that the patient has suffered from measles or scarlatina. Furthermore, there are other eruptions which may, on superficial observation, be mistaken for the above mentioned diseases; as for example, rubeola (rötheln) and urticaria. Latterly in Austria we have observed many cases of rubeola, which, as is well known, much resembles measles, and during the first days of its onset cannot often be distinguished from measles. The course of the disease decides in such cases which exanthem we have before us. Thus we see that the assertion of the parents that their children have had measles two or three times, or as people say here the "spots" (Flecke), does not carry much weight. Urticaria can much more easily be distinguished from scarlet fever, although it often enough comes on as an acute illness with vomiting, etc., still it is easily distinguished by single red spots (which run together by spreading), the wheals, and itchiness, and an experienced man in such cases can with difficulty make an error of diagnosis. . . . . Urticaria may sometimes occur during convalescence from scarlatina, and may be mistaken for a relapse, as it is often accompanied by fever and vomiting. I have observed one such case to which I shall refer below. In smallpox one has the characteristic scars and pitting as a proof of a previous attack if a second one should come on. In this connection it would be as well to remark that the varicella of infants very often occurs without regard to vaccination or smallpox. I mention this because Kassowitz in this Year-book has pronounced varicella and smallpox to be one and same disease. If varicella infantum is reckoned as variola, then a second attack of smallpox is of very frequent occurrence; nay more, it is the rule and not the exception, in spite of repeated vaccinations. . . . . Koerner has written in this Year-book about scarlatinal relapses and has added all the known published cases. Three cases of relapse from scarlatina in children are mentioned; in all three cases the second rash came out soon after the first (4½ weeks, 4 weeks, and the third 11 days); in the first two cases desquamation had already occurred, and in these a second desquamation took place in a characteristic way. In all cases of true relapse, or second attack, there must be desquamation of the skin. There are some cases of erythema which greatly resemble scarlatina, but in which no second desquamation occurs. I have seen many cases of general erythema coming on after operations and burns which might easily be mistaken for scarlatina. I lately observed a very instructive

case in private practice; a little girl 2½ years of age, with a somewhat pale skin, was burned by a furnace. The burn was about the size of a thaler (three-shilling piece), of the second degree and situated on the right arm. On the second day after the accident (which was not thought much of by the parents) severe fever and general convulsions came on, and the whole body with the exception of the face was covered with a dark red erythema, which completely disappeared on pressure. The convulsions lasted for an hour, disappeared and returned again, after which they ceased altogether. The above symptoms exactly resemble the eruptive stage of scarlatina, still there were no initial symptoms, as vomiting, etc., no throat affection, and finally not the slightest desquamation. The erythema disappeared completely in three days, as also the fever. . . . . Such attacks of erythema I have observed two or three days after operations, and also in cases of pneumonia of the apex before consolidation has taken place, I have observed general redness of the body; the absence of throat affection, and the character of the respirations would here save us from error. I have mentioned these cases to show how easily one might make a mistake, and how careful we should be before we pronounce a case to be a relapse or second attack of scarlatina. In every case of relapse or second attack, all the important symptoms must exist, especially those connected with the skin, and the characteristic desquamation must never be wanting. All the published cases of second attack should be received with caution if a true second desquamation did not occur. When a fresh eruption comes out during the second or beginning of the third week of the disease and before desquamation has taken place, there is special need of caution; in cases complicated with diphtheritic sore throat, desquamation is often delayed. In a boy 3½ years of age, with an ordinary attack of scarlatina, the first 8 or 10 days passed without any bad symptoms. On the 10th day a diphtheritic membrane appeared in the throat and rapidly extended, the glands of the neck were much swollen, and on the 13th day a red rash appeared as confluent spots on the body and extremities, the spots disappearing in some places and coming out in others. In some cases the skin remained quite normal, as the back and posterior part of the thighs. This confluent eruption might easily have been mistaken for a relapse or fresh scarlatinal eruption, the more so that the temperature rose and the child suffered from convulsions; when one looked closely at these spots (about the size of the palm of the hand) one saw white wheals as in urticaria . . . . . The following case is interesting because this patient suffered from two true attacks of scarlatina within a short space of time. Two brothers, F. (7 years), and E. (3½ years), strong healthy boys, suffered during the past winter from measles, and a short time after from varicella, both diseases ran a normal course; four weeks after recovery from varicella the youngest took scarlatina with the usual prodromal symptoms; the throat symptoms were mild, the throat uniformly red with spots of yellow-green exudation on the tonsils which were easily removed. The eruption over the body, extremities, and back was uniform, and not very severe. The eruption first appeared in the inguinal region, as fine red points; the forehead remained free from eruption throughout. The fever was not high, and disappeared at the beginning of the second week. Desquamation was well marked towards the end of the second week, and in the third week the skin of the palm of the hand and sole of the foot came off in one piece. Recovery was complete in four weeks. In the mean time the elder brother had been completely separated and so escaped the disease. He went to school where some cases of scarlatina occurred. After the dwelling had been thoroughly disinfected and aired, the elder boy came home and for six weeks remained healthy; in the beginning of the month of April he was taken with a very severe attack of scarlatina, which, in spite of the unfavourable symptoms at the beginning, ran a favourable course; throat affection existed in only a slight degree, and the forehead throughout remained also free from eruption. Some head symptoms existed in the beginning of the attack The eruption itself was a bright red, and (with the exception of the forehead) covered the whole body. After six weeks desquamation began and involved the whole body. As the younger brother had had scarlatina two months before, complete separation was not enforced, but he was merely restricted to the other end o.

the house. Twelve days after he became ill; fever, vomiting, difficulty of swallowing, and a diffuse redness of the fauces were the first symptoms. The following morning a scarlatinal eruption of a much more severe form than the first time, appeared. The course of the disease was favourable, and there was no throat or kidney complication; in fourteen days desquamation set in. This child had in the short space of two months, two veritable attacks of scarlatina, with all the important symptoms pertaining thereto. In this case the cause of the second attack must have been due to family predisposition, as the mother during the first illness of the younger boy had a severe angina with some diphtheritic membrane, high fever, blood and albumen in the urine, symptoms which soon disappeared. No eruption could be made out, still, in the third week there was a desquamation of small scales on the body and slightly on the extremities. If this was not scarlatina it was certainly a kindred disease. When the younger boy again had scarlatina, the mother again took ill in precisely the same way as before, viz., throat affection with diphtheritic membrane, blood and albumen in the urine; in addition to the above symptoms she had acute joint affections.

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From this short sketch it follows:—

(1) That scarlatina, as is already known, may occur in one and the same individual twice, and within the short space of two months.

(2) For the diagnosis of a second attack, one should not rely on a single prominent symptom, as the rash, but all the symptoms must exist, and the characteristic desquamation must not be wanting.

(3) The idea that because a person has recently had scarlatina, therefore he may expose himself to the disease, is erroneous, and that person should be completely separated so that there may be no danger of a second attack. The second attack may not always be so mild as in the above case, but on the contrary, according to Koerner, often runs a much more severe course than the first; Koerner mentions eight cases of death from second attacks.

(4) Family predisposition must not be overlooked.—*Canada Med. and Surg. Journ.*, May, 1877.

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On Salicylic Acid in Typhoid Fever.

M. Robin read a communication on this subject at the meeting of the Société de Biologie, January 27, 1877. He showed from figures in his hand that the remedy almost constantly diminished the quantity of urine excreted; as the result of its use, the quantity of indican is increased. Its elimination may be very slow, lasting seven or eight days. Lastly, M. Robin noticed an inconvenience which the remedy possesses: it produces sometimes ulcerations in the back of the pharynx, and even consecutively œdematous laryngitis. M. Robin recommends its administration in typhoid fever only in very dilute solutions, lest the diuresis be too much arrested. In answer to M. Charcot, M. Robin said that he had once observed buzzings in the ears as the result of the use of salicylic acid. M. Leven thought that the remedy should not be given in typhoid fever unless in small doses, in large ones it caused disorders of the digestive organs, which were particularly dangerous in this affection.—*Lond. Med. Record*, April 15, 1877.

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Hypodermic Employment of Colchicin in Chronic Rheumatism.

Dr. O. Heyfelder, of St. Petersburg, having seen in the Spanish journals an account of the advantage which Dr. Badia derived from the hypodermic use of colchicin in a case of chronic rheumatism, was induced to try its effect in seven cases, two milligrammes in a gramme of water being employed. Upon the whole the effects have been remarkable; and Dr. Heyfelder regards it as an efficient and speedy means of treating chronic rheumatism of the joints and rheumatic neuralgia, and well deserving of notice. Wherever febrile action prevails, and in parts exhibiting local inflammatory action, it is contraindicated. Its first application sometimes induced a moderate, and in one case considerable

local irritation. This irritation in different degrees was produced in nine out of the twenty-eight injections that were made in the seven cases. In persons with very sensitive skins the dose might probably be diminished. Where also there is local inflammation the injections should be made at a distance; and the vicinity of large lymphatic vessels should be avoided.—*Med. Times and Gaz.*, April 28, 1877, from *Berlin Klin. Woch.*, April 9.

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Cyanide of Mercury in Diphtheria.

Dr. A. Erichsen (*St. Petersburg Med. Woch.*, April 14), on the strength of twenty-five cases in which he has tried it, strongly recommends minute doses of cyanide of mercury (*hydrargyrum cyanatum*) in diphtheria. He believes in the efficacy of mercury abridging the duration of the diphtheritic process, while he knows of no other preparation except this which does not quickly disturb digestion and nutrition. Given in small doses, it scarcely disturbs the alimentary canal at all, even when continued for a long time. Indeed, syphilitic children from a year old may be treated for weeks without any such disturbance occurring, if it be given in doses of one-forty-eighth of a grain thrice daily. In diphtheritis Dr. Erichsen has used it at various ages—from seven months to fourteen years, as well as in adults—and in all the cases it was well borne. In a short time the membranes became thinner and less adhesive, so that even where they had spread into the larynx and induced obstruction, with cyanotic colouring of the face, they still separated and rendered the larynx free again. This was the case in three of the instances occurring in young children, the symptoms which seemed to threaten death or to require tracheotomy yielding to the internal use of the cyanide and the local application of hot sponges. This mode of treatment has also the advantage of rendering the necessity of local applications to the fauces much less frequent; and pencilling the parts with tincture of iodine twice a day suffices, instead of the constant applications, which are so irksome. The dose varies with the age, children to their third year requiring only one-ninety-sixth of a grain, and older children and adults one-forty-eighth of a grain every hour during the day and every two hours during the night. The following is the formula employed: Hydrarg. cyan. gr. j, aq. destill. ℥vj, syr. simpl. ℥ss; half or a whole teaspoonful every hour. Most of these twenty-five cases were children from the third to the fourth year of age, in whom the prognosis is not so favourable as in older children and in adults. Of the twenty-five only three proved fatal—one from paralysis of the heart, a second from suppurating parotiditis, and the other from coinciding meningitis; but in all the cases—even in the fatal ones—the diphtheritic process was arrested.—*Med. Times and Gaz.*, April 28, 1877.

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On the Morbid Anatomy of the Brain.

Dr. Carl (Virchow's *Archiv*, January, 1877) has the following remarks on the subject of leucocytes in the brain-substance.

1. In the cortical substance of every brain, even the most normal, many white corpuscles are to be found.

2. Retardation of the circulation and œdema of the brain bring about an increase in their number.

3. The corpuscles lie in the perivascular sheaths, and in the pericellular spaces.

4. They never enter the substance of the nerve-cells, nor give rise to irritation or nuclear proliferation in them.

5. Brain-phenomena are not caused by their presence, nor by their increase, nor by the retardation of the circulation and œdema, if these take place gently; but are only observed as the outcome of an acute increase in those cases in which the fever process and the causes of the fever have to come into the reckoning.

In a case of croupous pneumonia he has found giant pyramidal cells, such as were described by Krause [and by Batty, Tuke, Rutherford, Major, Mierzejewski, and others, in the brains of the insane. *Rep.*]

In a case of chronic emphysema, and in one of chronic myocarditis, he has observed the bodies described as amyloid [Bucknill and Tuke's Manual of *Psychological Medicine*, 1874, p. 631, *Rep.*] by Virchow, and often found in insane brains.

In a case of acute phosphorous poisoning he found leucin and tyrosin in the brain-substance, with fatty degeneration of the nerve-cells and neuroglia, and large fatty globules in the capillaries, the last-named being like the fatty embola after injuries of bones.—*London Med. Record*, April 15, 1877.

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Means of arresting Epileptic Attacks.

M. Nothnagel gives (*Berlin. klin. Wochenschift*, Nos. 41 and 46, 1876) the case of a workman subject to attacks of epilepsy, in whom each fit was preceded by an aura, occurring usually from a quarter of an hour to half an hour before the fit. The aura was characterized by a peculiar sensation of constriction, the seat and point of departure of which was the epigastrium. The sensation seemed to rise in the throat, and to compel the patient to breathe deeply and rapidly. Then it seemed to descend, and after recurring several times, finally affected the head, which was turned to the right, when the patient immediately became insensible. He had discovered for himself that on putting a quantity of salt into his mouth, as soon as the aura commenced, he could ward off the attack; a sensation of burning was experienced in the œsophagus, and the affection re-descended; a teaspoonful was insufficient; a handful was required. Brown-Séquard arrested, it is well known, attacks of epilepsy in his epileptic Guinea-pigs by turning their heads briskly to the side of the body opposite to that of the medullary lesion; and it would appear that a strong peripheric stimulus will serve the same purpose, as sharp pinching of the skin in the epileptic zone or elsewhere, or the application of a tight ligature to the fingers. In such cases the effect is probably due to a simple reflex inhibitory influence. Prof. L. Meyer, remarking on these cases, states that several years ago, in fact as long ago as 1855, Prof. Nothnagel observed that sulphate of quinine administered a certain time before an epileptic attack was very effective in preventing its occurrence, and in these days, when intravenous or subcutaneous injection can be so readily employed, this means would appear to be worthy of further investigation. The quantity administered by Prof. Nothnagel was from fifteen to forty-five grains.—*Practitioner*, April, 1877.

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The Diagnosis and Treatment of Auditory Vertigo.

Dr. W. R. Gowers, Assistant-Physician to University College Hospital, contributes to the *British Medical Journal* (March 10, April 7 and 21) the following elaborate paper on this disease, which has of late attracted so much attention:—

The form of vertigo which depends on a morbid state of the organ of hearing, and has been variously termed "auditory vertigo," "labyrinthine vertigo," or, from the name of the aural surgeon who first called attention to its more striking characters, "Menière's vertigo" or "Menière's disease," has passed, to some extent, from the province of special aural surgery into that of general medicine. The reason is not far to seek. The symptom vertigo has usually little or no apparent connection with its actual cause. Hence its origin is constantly unsuspected by the sufferer. Moreover, there exists frequently an obtrusive association between this giddiness and certain gastric symptoms, which has constantly been and is still frequently misconstrued, and the nature of the disease consequently misconceived by both the patient and his medical adviser. The object of this paper is to illustrate these associations, which so obscure the real relations of the symptoms, and to consider the points which are of chief importance in its diagnosis and in its treatment.

It is not necessary here to do more than allude to the evidence on which the pathology of the disease is based. That evidence is of three kinds: first, the

frequent association of paroxysmal vertigo with defect or disturbance of the function of the internal ear or auditory nerve; secondly, on some scanty pathological facts, which point to the existence in these cases of a morbid state of the semicircular canals; and, lastly, on the well-known experimental evidence of the connection between the function of the semicircular canals and the maintenance of the equilibrium of the body.[1] The theory of their function is, that they give information of the position of the head to a co-ordinating centre which presides over the equilibrium of the body, and which experimental physiology has located in the cerebellum. Into the question of the mechanism of the action and disturbance of the semicircular canals it is not necessary here to enter. Although the theory of varying pressure of the endolymph originated by Goltz, and rendered more precise by later writers, appears highly probable, its application to the details of the normal action of the canals is still surrounded by uncertainties which render it difficult to frame a satisfactory detailed explanation of the phenomena of this disease.[2]

All that we can conclude is, that their morbid condition causes a morbid action of the centre of equilibration, which may so disturb the equilibrium of the body as to throw the sufferer to the ground, or may merely result in a sense of corresponding movement or of mere instability. It is important, for a clear comprehension of the symptoms of these cases, to remember that the sense of movement and an actual movement, subjective vertigo and actual rotation or falling, are aspects of the same process. It is the motor tendency to turn which is felt as subjective vertigo. This was pointed out long ago by Dr. Reynolds,[3] and its significance has been insisted upon from many points of view by Dr. Hughlings Jackson.[4]

Whether any impression from the semicircular canals enters into the total sensation is uncertain, but that the chief part of the feeling of vertigo, that of movement in the individual or in external objects, is the sensation of an "incipient motor process," is evident from the fact that the sensation in the slighter attacks is always in harmony with the movement in the severe attacks. If the patient feel as if he were moving, it is towards the side to which he does move in the severe paroxysms. If the sensation be merely one of movement in external objects, it is always from the side towards which the patient falls; *i. e.*, it is the apparent movement of objects (say to the left) which would result from an actual movement of the head or eyes to the right. In a case to be

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[1] An abstract of the facts, with reference to the chief sources of information, has been given by Dr. Hughlings Jackson (*Medical Times and Gazette*, August 17th, 1872, and *London Medical Record*, 1874, pp. 238 and 254). The experimental evidence has been fully described and discussed by Dr. Ferrier (*Functions of the Brain*, p. 69, and *West Riding Asylum Reports*, vol v.).

[2] Assuming the theory of Mach, Breuer, and Crum-Brown to be correct, that the variation in the pressure of the endolymph in the ampullæ of the several canals, produced by the movements of the head, constitutes the means of their stimulation, it is reasonable to suppose that the equilibrium centre is influenced by *minus* as well as by *plus* variations in the pressure of the endolymph in the ampullæ. The excitation of the several ampullary nerves in various movements will therefore be a very complex matter, involving probably the mutual action of several canals, just as the guiding information as to the position of the eyeball, by which the equilibrium centre is also influenced, depends on the degree of contraction of several muscles, oblique and straight. It must be remembered, also, that the free communication between the canals will increase the complexity of their mutual relations.

[3] "Generally, in man, the tendency to movement is arrested by an effort of the will, *per se*, or by grasping some object for support. The sensation of its production remains, and is projected onwards into the objects of the material world." (*On Ver igo*, 1854, p. 41.)

[4] "Giddiness is objectively a motor symptom, and the 'sensation' it is attended by is a state of consciousness accompanying the outgoing current." (*Clinical and Physiological Researches on the Nervous System*, Preface, p. xxv.; see also *Medical Press and Circular*, December 2d, 1874, p. 477.)

presently narrated, this was very marked. The practical significance of this is, that the character of the vertigo is an important aid in the diagnosis of its cause, and we are able to determine its character as accurately from such a subjective sensation as if we saw the patient reel. Hence the importance of ascertaining in every case of giddiness the precise character of the patient's sensation.

The derangement of hearing with which this form of vertigo is associated may be of two kinds. Sometimes there is evidence of undue excitation of the auditory nerve, noises in the ears, permanent or only at the moment of the paroxysm. More frequently, indeed almost universally, there is evidence of defective sensitiveness. This defect may be conspicuous or obscure; may range from a considerable degree of deafness to a slight defect in audition, which it requires much care to ascertain. The knowledge that the defect may be limited to the perception of sound conducted through the bones of the skull is an important addition to our means of diagnosis. The fact was pointed out by the late Mr. Hinton[1] and by Mr. Dalby,[2] and cases in which it was noted have been published by Dr. Ferrier, Dr. Duffin, and others. This loss of what may conveniently be termed *perosseal audition*, is regarded as evidence of an affection of the labyrinth or of the auditory nerve, may be absolute; a tuning-fork vibrating in contact with any part of the head or with the teeth, may be unheard in the affected ear, while it is heard readily if held opposite the meatus; or the loss may be partial, and in that case it may be detected by the method, commonly employed by aural surgeons, of closing the ears while the tuning-fork is sounding in contact with the vertex or some other part of the skull. Closure of the meatus, if the latter be unobstructed, increases the intensity of the sound, if the perception of sounds conducted through the skull be unimpaired, renders it weaker or inaudible, if there be impairment. But the method is one that requires much care and repeated examination to detect a slight defect in an unintelligent patient. It is important, however, to examine these cases, not only with a tuning-fork, but with a watch. There may exist marked impairment of perosseal audition to the watch, while the tuning-fork is well heard.[3] I know a gentleman who has been subject for several years to slight attacks of vertigo. The motion is uniform, a tendency to fall to the left. His hearing is acute; it was thought to be perfect. A tuning-fork in contact with the head is heard perfectly well with ears open or closed. A watch placed opposite the ear is heard perfectly well; but the loudest ticking watch pressed against any part of the head is not heard in the least. The condition, however, is a variable one. At times a watch in contact with the head is heard well; more frequently it is not heard at all. The liability to attacks of vertigo seems to correspond to the periods of imperfect audition. Whenever he has been tested after an attack, the power of hearing the watch has been always absent.

Even a slighter degree of impairment of the power of hearing a watch in contact with the skull may be of significance, as is shown by the following case lately under my care, in which the tuning-fork failed to reveal any abnormality in the function of hearing.

P. D., aged 56, admitted into University College Hospital on August 15th.

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[1] On Labyrinthine Vertigo (*Guy's Hospital Reports*, 1873).

[2] Lectures on Diseases of the Ear, 1873.

[3] The method of testing perosseal audition with the watch which I have found most useful, is to hold the watch first close to, and then in firm contact with, the zygoma, the parietal eminence, and the mastoid process—the direct passage of the vibrations to the meatus being prevented by placing the hand as a screen between the watch and the ear in the two former positions, and in the latter by drawing forward the pinna. The effect of contact in the normal state is very marked. The watch not in contact is scarcely heard or inaudible, while in contact it is loud. This method of testing is somewhat coarse, but very convenient. The effect of closure of the meatus on the sound of a watch is slighter than in the sound of a tuning-fork; and although in health it is distinct, it is not sufficient to render this test a convenient one.

1876, had suffered during the last five years from startings on going to sleep, which lately occurred every night. Four months previously, he had a blow on the head and on the bridge of his nose from the fall of plaster. In June (two months before admission), he noticed a considerable degree of deafness of the left ear, which continued for a fortnight and then passed away. During the six days before admission, a confused noise in the left ear was noticed. Twice during the preceding month he had an attack of giddiness of short duration, of which no definite history could be obtained. The day before his admission, while walking, he suddenly became giddy, as if he were turning round, staggered towards the right side, and fell, as he says, in trying to recover himself. A slight sense of movement on his part and in surrounding objects continued until his admission. He then complained much of a "confusion of sounds," which seemed to be in his head, and of headache in the occipital region and behind the ears. His hearing at first seemed to be natural. A watch was heard a good and equal distance from each ear. A tuning-fork was heard at eight feet, and was well heard when sounding in contact with the head in various positions, and in each ear it was increased in loudness by closing the meatus. A watch was heard in contact with the head and on the right side; closing the meatus increased its loudness. On the left side, however, closing the ear rendered the sound less loud; the watch had a double beat, and closure of the ear rendered one set of beats entirely inaudible. This result was obtained in every examination. (The patient was a very intelligent man, and his answers seemed reliable.) A few days after his admission, he had another severe attack of giddiness, with great "confusion of sounds in his left ear." His rest at night was much disturbed, and he turned about in his sleep until his head came to rest at the foot of the bed. Sometimes he lay curled round, with his head hanging over the edge of the bed. If he were awakened and put straight, on going to sleep again he soon returned to the former position. Five days later, he had another attack of vertigo, which continued in a slighter form for some hours, and some peculiar clonic spasm was noticed in the right arm and leg. He appeared able to control it when his attention was directed to it; but, when his attention was otherwise engaged, the spasmodic movement went on, the right hand being continually jerked up and down, so that the hand kept striking the epigastrium. At this time, he said he felt as if he were falling through the bed or swimming about the ward, so that an effort was necessary before he could realize that he was in bed. During the height of the attack, he complained of a continuous whirling or humming noise in both ears. A dose of chloral and bromide of potassium quieted him, and, on bromide of potassium and iron, he had no other severe attack while in the hospital.

In this case the change in the hearing was so slight, that hesitation might well be felt in assigning any significance to it, were it not that the previous deafness on that side, and the noises in the ears which accompanied the severer attacks of vertigo, give weight to the auditory defect, slight as it is. The occurrence of quasi-convulsive movements is a point of much interest, to which I will return. The remarkable postures assumed by the patient in his sleep are curious, and may perhaps be connected with the altered action of the organs or centres of equilibration. May the sudden startings on going to sleep be associated with the same condition? It is a well-known fact that they are often related to a distinct dream of defective equilibrium.

But slight impairment of the power of hearing a watch or a tuning-fork, when vibrating in contact with the head, is not uncommon, even in persons who do not habitually suffer from vertigo. This is not surprising, since it is almost certain that the apparatus for the recognition of sound and of the position of the body are not the same, although they may be adjacent and even connected and supplied by portions of the same nerve. Even supposing, with Dr. Ferrier, that the semicircular canals are the channels by which the vibrations conducted through the bone reach the cochlea, we do not know that all disturbances of the semicircular canals cause vertigo. But I think some facts to be adduced render it probable that derangement of these canals may bring the centre of equilibration into an unstable condition, in which it is easily excited to sudden perverted action (paroxysmal vertigo) by some abnormal im-

pression on the other nerves with which it is connected. It seems, therefore, that a morbid state of the semicircular canals may predispose to vertigo, as well as excite it. I shall return to this in speaking of the diagnosis of auditory and gastric vertigo, and shall mention some instances in which the attacks of vertigo appeared clearly predisposed to by aural, and excited by gastric, disturbance. A probable example of such a relation was afforded by a member of our profession, who, on two occasions near together, was seized with intense vertigo, brief but definite in character, the sensation being on each occasion that of a similar rotation. The attacks occurred after and were attributed to the inhalation of tobacco-smoke into the lungs. On subsequent examination of the sense of hearing, it was found that, while both tuning-fork and watch were heard when in contact with the head, closure of the left meatus rendered the sound considerably louder, while closure of the right meatus made little difference in the intensity of the sound. He had suffered from some ear-trouble in the right ear, after scarlet fever in early life; the ear was deaf for a time, but gradually, in the course of years, regained normal power. It is possible that, in this case, some permanent defect in the function of the semicircular canals, which being slight, or being compensated or allowed for in the sensori-motor adjustments, did not cause vertigo, may yet have induced a state of defective stability in the centre for equilibrium, which the strong impression on the pulmonary pneumogastric nerve sufficed to overturn. The relation of the pneumogastric to the function of equilibration is well known. Dr. Hughlings Jackson has pointed out that the connection of its nucleus with that of the auditory nerve in the medulla, may explain the frequent occurrence of vomiting in the paroxysms of Menière's disease; and Dr. Ferrier has suggested that there is probably a still higher association between the two nerves in the equilibrial centre.

The vomiting which accompanies the disturbance of equilibrium, and which is to be attributed to the association with the function of the pneumogastric, is the source, as already stated, of much of the misconception as to the nature of these cases. A few years ago, had the question been asked, what are the commonest causes of paroxysmal vertigo? the invariable answer would have been: "A disordered stomach or a diseased brain." It is probable that, even now, the exceptions to such an answer would be comparatively rare. The answer, at any rate, indicates the conditions from which the diagnosis of the auditory-nerve vertigo has to be made; for gastric and cerebral disturbances are probably, next to labyrinthine affections, the most common causes of giddiness, and the paroxysms of Menière's vertigo are constantly ascribed to one or the other of those conditions.

The gastric associations are especially liable to mislead. The occurrence of vomiting, in the absence of other obtrusive cause of the vertigo, is held as proof of a causal derangement of the stomach. Sometimes, an attack of vertigo may not cause vomiting; it may merely disturb the gastric functions, just as the motion of a ship does with some persons in whom it does not cause sea-sickness. The dyspepsia which results is regarded as a sufficient cause for the giddiness. But, further, in persons the subjects of auditory vertigo, whose equilibrium nerves and centre are deranged, a primary gastric disturbance seems sometimes to excite a paroxysm of the special vertigo to which they are liable, and the gastric disturbance which thus causes the attack is naturally regarded as its only antecedent.

An illustration of this is afforded by the case of a gentleman who suffers from frequent attacks of intense dyspepsia and vertigo; the former appearing to him to precede and cause the latter. The vertigo is sudden and violent; he has fallen with it, and would fall always if he were not careful. He cannot say to what side he falls; but on one occasion must have fallen to the right, as he grazed the right side of his cheek. He is almost completely deaf on the right side; a watch, in contact with the skull on that side, is quite inaudible. The hearing on the other side seems unimpaired. The deafness came on gradually about twelve years ago. He has been subject from boyhood to attacks of violent dyspepsia, with vomiting and prostration. In his youth they were as severe as they are now; but he never suffered from vertigo until the onset

of his deafness. Since that time the dyspepsia and vertigo have gone on together. The paroxysms of vertigo in this case appear distinctly to be excited on the attacks of gastric disturbance. They are produced by errors in diet, and the long liability to such dyspepsia indicates that it is not to be regarded as secondary to the aural affection. But the sequence of the symptom, the coincidence of the liability to vertigo and of the ear-disease, indicate clearly that the giddiness is ultimately due to the influence of the latter, although it is excited by the stomach derangement.

A good illustration of the obscurity which gastric symptoms may confer on these cases was afforded by a woman, 50 years of age, who came under my care last spring at University College Hospital. She gave a long history of the symptoms of chronic ulcer of the stomach, for which she had been previously in the hospital. On examination, the stomach was found to be tender and evidently dilated. Vomiting was still frequent, occurring chiefly in the evening, when much of the food taken during the day was rejected. Giddiness was complained of as associated with the vomiting. When she was first seen, the giddiness was thought to be due solely to the gastric disturbance. Subsequent questions as to the character of the vertigo and the time of its occurrence elicited a very definite history of another kind. It appeared that the giddiness very frequently came on when there was no sickness; that it occurred in paroxysms; and that it was produced especially by sudden movements, as lying down, or sitting up, or turning round in any posture. In the attacks, the sensation was always of a definite character, being as if "something went over the top of the head from the right side to the left." If standing, she often fell, and, even in sitting, she would fall from the chair. She always fell to the right. Whether she fell or not, she always had, during these attacks, the sense of falling to the right and backwards, never forwards or to the left. Many attacks were witnessed. In some, she fell to the right; in others, merely backwards, although she felt as if falling to the right. In some, she almost lost consciousness; could be roused with difficulty. She said that she had many times actually lost consciousness for a few minutes. During the attacks there was slight flushing of the face. The eyelids were closed; on opening them, there was no dilatation of the pupils. The eyes were all the time in the median position, never turned either to the right or the left, even when the sense of falling to the right was most intense. The duration of the attacks varied from a quarter of a minute to several minutes. The vertigo commenced suddenly, but ceased gradually.

The definite character of the vertigo led to a careful examination of the state of hearing. It was found that a watch was heard less acutely with the right ear than with the left. (Right at one-third, left at two-thirds the normal distance.) She could hear all the notes of a piano; but, after listening for a little time, the upper and middle notes suddenly ceased to be heard. After a little time, she could hear them again. The upper notes, she said, constantly sounded a "long way off and faint, like the strings of a guitar." She had noticed lately that her daughter's voice, in singing, sounded distant and "squeaky," quite unlike its ordinary character.

Audition through the bones of the skull was tested with the tuning-fork. Placed in contact with the top of the head, she said she could hear it in the left ear only. Placed on the left parietal eminence, she heard it invariably louder when the meatus was closed than when it was open. Placed on the right parietal eminence, she could hear it only faintly, and, when the meatus was closed, she could not hear it at all. Examination with a watch yielded the same result. The meatus was free from obstruction. She had been troubled with occasional singing and whistling noises in the right ear.

Sight was unimpaired, except by presbyopia. The ocular muscles were unaffected. Smell and taste were both diminished. Neither peppermint, assafœtida, nor camphor could be recognized. Neither citric acid, salt, nor sugar could be tasted on either side. Quinine was tasted a little. No pain was referred to the ear, but neuralgic pain and tenderness over the right side of the head were complained of, and, on examination, there was distinctly defective tactile sensibility in the parts supplied by the right fifth nerve. There was a

good deal of general weakness and prostration, and she was liable to occasional attacks of great prostration, sense of dyspnœa, surface pallor, without marked failure of pulse. She was disturbed at night by starting in her sleep, accompanied with a sensation of falling; she would wake in a perspiration. She constantly dreamed of falling, and dreamed that she saw other persons falling from heights.

Many drugs were tried to lessen the attacks of giddiness (bromide of potassium, belludonna, gelseminum, Indian hemp, etc.), but with no permanent benefit. Absolute rest in the hospital (when she was admitted under the care of Dr. Reynolds) was followed by marked improvement, and the attacks of paroxysmal headache were effectually relieved by inhalations of nitrite of amyl, which had, however, no effect on her vertigo. At a later date, she thought that salicylate of soda did her more good than anything else.

The evidence of defective labyrinthine function in this case is clear. The character of the vertigo, its paroxysmal and uniform character, render it probable in the highest degree that it was due to that morbid action of the right auditory nerve, of which there was independent evidence. The distinct affection of other cranial nerves suggests the probability that the impaired function was due to disease of the nerve-trunk or centre rather than to disease of the ear itself.

The more immediate interest of the case is, however, the combination which it presented of chronic gastric symptoms and auditory-nerve vertigo. The association was here conspicuously accidental, but the confusion in diagnosis which the association caused is typical. The same combination is constantly seen in cases in which the gastric symptoms are less pronounced. In this case, the distinction of the cause of the vertigo was easy, not only on account of its pronounced character, but because the gastric symptoms were those of organic disease, and organic disease of the stomach is less frequently accompanied by vertigo than the simple disturbances (chronic gastric catarrh: Trousseau).

The sufferers from this affection, besides their acute attacks, are often liable to a slighter chronic sensation of disturbed equilibrium, the "interparoxysmal reeling" to which Dr. Hughlings Jackson has called attention. It may take the form merely of a vague sense of instability, which is expressed by the word "dizziness" and the like. This condition is often in constant relation to the gastric functions. The least stomach-disturbance at once excites the feeling, and most careful dietetic management is necessary, in order to keep the patient free from his annoying sensations. The following case is an illustration.

A gentleman aged 35 sought advice on account of chronic gastric disturbance associated with slight giddiness, which he regarded as secondary to the dyspepsia. His tongue was clean and appetite fair, but he complained of acidity, flatulence, and frequent sense of prostration. There was marked epigastric aortic pulsation; no cardiac murmur, but a weak impulse and soft radial pulse. The giddiness from which he very often suffered was vague in character, and was worse when his stomach was a little out of order. It was only on inquiry for ear symptoms that he said his left ear was a little deaf, and that he had occasionally "singing" in it, especially when his dyspepsia was troublesome.

Some years before, he had suffered from attacks of sickness and giddiness, but could give no detailed account of them. He dated his present symptoms from a series of severe paroxysms of vertigo six months previously. The first of these occurred without warning or apparent exciting cause. He was walking with a friend, who was on his right hand. Suddenly, he felt something which seemed like a blow on the left side of the head behind the ear, and made him "whirl round" to the right and fell on his right side with such force as to knock his friend down also. He said that it seemed "as if the ground on his right suddenly rose up to him." He stuck his hands convulsively into the ground, but did not lose consciousness, calling out at once to his friend, "Let me alone; I am giddy." In a few minutes, the giddiness gradually subsided, and he walked a mile or two home, but he had some difficulty in walking straight.

Two days afterwards, he had a second attack. He had been busy in law courts all day, and had omitted to take any food until long past his usual time.

Then he had dinner, and afterwards walked along the street, when he suddenly found himself getting giddy. He had not time to call a cab, but managed to clutch hold of some railings. He seemed to hear a roaring sound in his left ear and fell towards the right. Although he held the railings with all his force, he could not prevent himself from falling against them and grazing his right cheek, and then sliding down to the ground. He believes there was no loss of consciousness; for he remembers the chaffing remarks of bystanders on his presumed intoxication. The giddiness soon passed, but he felt for a time weak and prostrate.

The third attack was less severe. It occurred in bed soon after waking in the morning. He was lying on his back, when the bed on which he lay seemed suddenly to be rolling over from the right; just as in the first attack, the ground seemed to rise up from the right.

He had no subsequent attack until a day or two after my first interview with him, when he had a slight attack one evening while at supper. He did not fall, but all objects seemed to revolve round a centre situated in front of him, those above the centre moving from right to left. Next day, he had an attack of diarrhœa.

When first seen, there was some wax in each meatus; but, after this had been completely removed by syringing, it was found that the hearing in the left ear was reduced to one-third. A tuning-fork in contact with the top of his head was heard, he thought, only in the right ear, but audition through the skull, tested by closing the meatus while a tuning-fork was sounding in contact with the parietal eminence, seemed defective in each ear. In each case, closing the meatus rendered the sound less distinct, and the diminution was greater on the right side than on the left. The watch in contact with the skull, however, was heard on the right side, and not at all on the left.

The case is thus a fairly typical one of labyrinthine vertigo. The noise in the left ear at the moment of the onset of the vertigo points to that ear as the chief seat of the mischief, and with this the defective perosseal audition of the watch corresponds, although the defect in the perosseal audition of the tuning-fork was greater in the right ear. The movement in the attacks was, therefore, as usual, from the side on which the ear was affected. The association of the giddiness and the gastric disturbance was marked both in some of the severer attacks and in the more persistent slight giddiness.

The most important point, then, in the diagnosis of auditory from gastric vertigo is the recognition of an impairment of the function of the auditory nerve shown, first, in deafness, and, secondly, in tinnitus, and the most significant change is the loss of the power of hearing a watch in contact with the skull. The point of next importance is the character of the vertigo. The sensation which results from a primary gastric disturbance is usually vague, a confused sense of defective equilibrium; that which results from a labyrinthine affection is definite, a sense of movement in a certain direction, subjective or referred to other objects. This statement is not in complete accordance with the descriptions of gastric vertigo which have been given by Trousseau and other writers, who have described vertigo of very definite character as the consequence of gastric disturbance only. But the fact that the patient may be unconscious of a most significant auditory defect, lessens the value of former observations as evidence of the definite character of stomachal vertigo. My own conviction is that, in the vast majority of the cases in which a vertigo of definite and uniform character is apparently excited by gastric disturbance, an auditory defect will be discovered on careful examination. In a small proportion of cases, no auditory defect may be found. In some of these cases, there may be disturbance of some other sensory nerve also related to the function of equilibration. But, on the other hand, the sensation which attends a labyrinthine disturbance may be vague in character. Hence definiteness in the character of the sensation is of greater value as suggesting a primary affection of the auditory nerve or the centre of equilibration, than is the absence of definiteness as excluding such a source of the giddiness. Lastly, the sequence of the gastric symptoms and vertiginous sensations is of some significance, although, as we have seen, this may easily be misunderstood. Vomiting, dyspepsia, or

diarrhœa, after an attack of vertigo, is no evidence that dyspepsia is the cause of the trouble. Gastric derangement before the vertigo may be a primary cause of the vertigo, or may merely excite an attack in the presence of a derangement of the equilibrium centre.

Cerebral Disease.—Vertigo may be a symptom of cerebral disease, and the attacks which result from a labyrinthine affection may be of such a character as to simulate very closely those of cerebral origin. This resemblance depends chiefly on the occasional occurrence of loss of consciousness in the attacks of auditory vertigo, and on their suddenness. Sudden loss of consciousness may be a symptom of two forms of cerebral disease, apoplexy and epilepsy, and from each of these auditory-nerve vertigo has to be distinguished.

Apoplexy.—The resemblance to apoplexy struck Menière very forcibly, and the affection was accordingly termed by him "apoplectiform." Instances are occasionally met with which merit such a designation. A medical friend is now suffering from indubitable auditory-nerve vertigo, whose first attack was of an apoplectiform character. Now, the attacks are always referred by him to gastric disturbance. Although the sensations are described by him as intense giddiness and inability to stand, there is no definite sense of rotation or tendency to fall in a definite direction. The first sensation is a sense of suffocation and of oppressive heat; he then bursts into a perspiration and feels intensely giddy, so that he is obliged to lie down. As long as he is lying down, the sensation of giddiness ceases; but, if he attempt to rise, it comes on again. For many years, since an explosion near him, he has been partially deaf in the right ear. A watch is heard six inches from the left, but is not heard at all with the right ear. A tuning-fork vibrating in contact with the skull is well heard in the left ear, and increased by closure of the meatus. He thinks he can hear it in the right ear, but it is not increased by closing the meatus. He has continuous tinnitus in the right ear. When at his best, the noise is like a "dull buzzing;" but, if his stomach be deranged, or if overworked, the sound rises to a persistent hissing, "like an engine." It is greater for some hours before an attack of giddiness, but is not louder at the moment of an attack. His first attack was one of sudden and profound loss of consciousness, without much giddiness. He was walking in the city, when he suddenly lost consciousness and fell. He probably had no convulsions, but was taken to a hospital, where he was thought to be in a state of post-epileptic coma. Some hours passed before he recovered consciousness. The second attack, however, was attended with vomiting and no loss of consciousness.

But the cases are rare in which the loss of consciousness is so considerable and so lasting as to render the diagnosis a matter of real difficulty. A speedy return of consciousness, coupled with the persistence of vertigo and the absence of any symptoms of local weakness, generally renders the nature of a case sufficiently obvious. The history of preceding attacks will also indicate the nature of the affection. In a first attack, as in one depending on an acute inflammation of the semicircular canals, a diagnosis might be for a time impossible.

Diagnosis from Epilepsy.—The attacks of auditory nerve vertigo resemble those of epilepsy in several particulars. The resemblance is of much significance. A sensation of vertigo often attends the slighter attacks of epilepsy. In these, however, consciousness is usually, but not always, lost, while consciousness is usually preserved during the paroxysms of auditory nerve vertigo. Severe attacks of the latter may be accompanied by sudden, transient loss of consciousness. The sufferer may even fall, and be unaware that he has fallen. A patient whom I once saw immediately after an attack had fallen a hundred yards from the place to which he was going, and had then walked to the house, but could not say how he had got there, and did not remember the fall, of which his clothes showed proof. He retched, vomited, and giddiness persisted for an hour. In this case, there had been many attacks of auditory vertigo, and there was no suspicion of epilepsy.

The common features of the two conditions are instructive. No doubt the significance of the feeling of vertigo is in each state the same. In each, it depends on an "incipient motor process" (Hughlings Jackson). In each case also, there may be a developed motor process. The violence of the movement

in severe attacks of auditory nerve vertigo is remarkable. It is no mere compensatory action to maintain a disturbed equilibrium; the patient is dashed to the ground with force. In a case, detailed above, the patient fell on one occasion with great violence; while, on another, his grasp at some railings was insufficient to prevent him from being borne down to the ground with force. In a case mentioned by Dr. Ferrier, a patient was turned round three times and then dashed to the ground. Such movement must result from the "discharge" of a motor centre, quite analogous to the discharge which occurs in an epileptic fit. If we locate the centre for equilibration in the cerebellum, we may perhaps regard Menière's disease as a cerebellar epilepsy, reflex in character, determined by an irritation of the semicircular canals,[1] alone or in conjunction with impressions from some other nerves with which the centre is in connection, as those of the pneumogastric nerve. On this view, it is not difficult to understand the loss of consciousness which may accompany the severer seizures, since the connections of the cerebrum and cerebellum are intimate; fibres from almost all parts of the hemispheres being gathered into the superior cerebellar peduncles.

It has been remarked that ear diseases may excite actual convulsions, apart from any direct affection of the brain. Such cases have been described by Mr. Hinton, Dr. Brown-Séquard, and others. Many attacks of paroxysmal vertigo present other symptoms resembling convulsive seizures, and rendering it doubtful in which category they should be placed. A premonitory sensation, apparently unconnected with the ear, may be present. In the case of Menière's disease related by Dr. Duffin, some attacks were preceded by such a sensation, which passed from the hypogastrium to the occiput. A case, presenting very interesting symptoms of this character, has been lately under the care of Dr. Ringer, in University College Hospital. The patient, a man about forty years of age, was bitten by a dog, about three months before admission, in the back of the right leg, below the calf. The wound was cauterized and healed, but a few weeks afterwards became painful; and one day a sudden pain seemed to start from it, pass up the leg and side of the trunk to the right side of the head behind the ear, and then his head seemed to go round and round "like the wheel of a steam-engine," in what direction he could not say. He had many slighter attacks, and, after the giddiness had subsided, a pain seemed to pass up the leg and down the arm to the palm, backwards and forwards. He was conscious of no auditory defect; but it was found on examination that, while the hearing on the left side was in every way normal, that on the right side was distinctly defective. A watch was not heard so readily opposite the ear as on the left side, and whereas its sound on the left side was much increased in intensity by contact with the skull, it was not heard at all when in contact with the skull (zygoma or mastoid process) on the right side. There was also some persistent defective equilibrium; in walking, he experienced a constant tendency to go to the left; but he explained this by describing it as the corrective of a tendency to go to the right. The probable explanation of this case I think to be that the equilibrial centre, being disturbed by the morbid state of the auditory apparatus and nerve, was further perverted by the irritation from the bite, which developed sudden overaction in the centre, an "irradiating" action of the sensory centre being set up at the same time.

If the paroxysmal auditory nerve vertigo be thus due to an epileptoid process, it is to be expected that the condition of instability of the nerve-cells, such as we recognize as an important element in the pathology of epilepsy, may

[1] M. Pierret, in a recent communication on the origin of the auditory nerve (as Dr. Hughlings Jackson has lately mentioned), appears to doubt whether its fibres can be traced with any certainty so far as the cerebellum. The direct evidence contained in Dr. Lockhart Clarke's paper in the *Philosophical Transactions* for 1868 is, however, very convincing, especially his comparative investigations on animals. Indirect evidence is afforded by the fact which he points out, and which I have repeatedly verified, that a large number of the fibres of both divisions of the auditory nerve (the anterior especially) pass into the substance of the restiform body and mingle with its fibres; and the restiform body passes entirely to the cerebellum.

influence in some cases the occurrence of this affection. The only way in which such a condition of nerve instability could be recognized as a factor in Menière's disease would be by the coexistence of epilepsy and auditory nerve vertigo. Of course, much care and even hesitation is needed in diagnosing auditory nerve vertigo in the presence of epilepsy; but in two cases, at present under my care, there is, I think, clear evidence of the coexistence of the two maladies.

One of them, a married woman aged sixty-five, began to suffer from epileptic fits at the climacteric period, at about forty-seven; the fits continued for six or seven years, and then ceased. All the fits were the same in character; they were preceded for a day or two by slight fainting attacks, and a slight feeling of faintness was the immediate warning of some of the fits. During the attack, consciousness was lost, and there was slight jerking. She slept afterwards, and on waking had occipital headache. For the last twelve years, she has had no fits. During the last two years she has suffered from vertigo, paroxysmal; the attacks sometimes come on when sitting still, but are more often induced by a sudden movement, especially by looking up. The sensation during an attack is that of falling backwards, and towards the right. It always comes on sufficiently deliberately to enable her to take hold of some object, and save herself from falling. She never loses consciousness. She frequently vomits with the attacks, and refers them to "biliousness." She was conscious of no defect in hearing; a watch is heard on each side at nine inches from the head. A watch, pressed against the left parietal eminence, is heard slightly, but on closing the ear she ceases to hear it. A watch in contact with the right parietal eminence is not heard at all, with the ear open or closed. (The meatus is free from obstruction.) On each side, a watch in contact with the malar bone, and shielded by the hand from the ear, is unheard. A tuning-fork on each side, in contact with the parietal eminence, is heard, but less loudly when the meatus is closed than when it is open. The effect of movement on the giddiness was tested; a sudden jerk of the head backwards brought on an attack; a sudden rotation of the head to the right also brought on an attack, while a sudden rotation to the left had scarcely any effect. During the six weeks before she came under treatment, she had two more fits, of the same character as the earlier ones. Since the recurrence of the fits, the giddiness has been more troublesome.

In the other case, a girl has suffered from several epileptiform convulsions, and has almost constant vertigo, varied by severe paroxysms on movement. The giddiness is worst after rising in the morning. The sensation is of falling backwards, and to the left. She has constant noises in the ears, and is generally, though not always, unable to hear a watch in contact with the head. Occasionally, a watch is heard faintly when in contact with the mastoid process. This patient suffered at night from twitching of the right limbs. A similar symptom existed in the case of the man whose strange postures during sleep have been described, and indicates a tendency on the part of the motor centres to spontaneous discharge. She is also troubled with startings in sleep, as were several other patients whose cases have been detailed. It may be suggested that, in this case, the epileptiform convulsions are really excited by the aural affection. But such an explanation will not apply to the other case mentioned; and I believe that convulsions have not been described as the consequence of anything but a severe ear disease.

It will be seen from these remarks that the diagnosis from epilepsy must turn, as in the case of gastric disturbance, to some extent on the detection of defective audition, and especially on defect in the power of hearing vibrations conducted through the skull. The definite character of the vertigo is in these cases no criterion. A more important symptom is its persistence between the paroxysms and its long duration in the paroxysms themselves. Its relation to movement is also important. If it be related to change of posture, and can be produced by certain sudden movements of the head, it is probably due to auditory nerve disturbance. In the latter, the attacks are succeeded by vomiting, much more frequently than are the attacks of *petit mal*. Lastly, there is rarely the objective evidence of momentary loss of consciousness, which is so frequent in minor epilepsy, even in the slightest attack; in auditory nerve vertigo, con

sciousness is only lost or obscured in severe attacks, in which giddiness persists for a considerable time and vomiting is frequent.

Production of Auditory Nerve Vertigo.—Before speaking of the treatment of this affection, it is worth remark that auditory nerve vertigo can be produced artificially. Quinine produces a sense of confusion with tinnitus; but very definite symptoms may be caused by salicylate of soda. This was shown very strikingly in the case of a patient lately under treatment for acute rheumatism in University College Hospital (under the care of Sir William Jenner). The patient was a woman aged forty, whose hearing was supposed to be unimpaired. She was not subject to giddiness. It was her first attack of acute rheumatism, and there was no cardiac affection. On January 26th, salicylate of soda was commenced in doses of twenty-five grains every three hours. On the 28th, she complained of noises in ears, deafness, and giddiness, which the next day had increased so much that the salicylate was omitted. The following day the giddiness was much less, and on the 31st had almost gone. On February 6th, the same dose was resumed; on the 7th, the same symptoms were complained of. The noises in the ears were constant; a watch was heard only at two inches distant from each ear, and was not heard at all on either side when in firm contact with either the zygoma or mastoid process. A tuning-fork on the vertex was heard fairly well, but the sound was not increased by closing the ears. The giddiness was slight and indeterminate as long as she lay still, but was very considerable and definite when she raised her head or sat up. Objects before her all seemed moving to the right. On the 8th, these symptoms continued, and the salicylate was discontinued. On the 10th, the giddiness was gone, and she could hear the watch at a distance of six inches from either ear, and could hear it, although faintly, in contact with the zygoma or mastoid process, but not when in contact with the parietal eminence. On the 23d, the salicylate was resumed, and, eighteen hours after its resumption, deafness and giddiness had returned, which again ceased a day or two after the discontinuance of the drug. When the patient was convalescent, a careful examination of the state of hearing revealed very little abnormality, the only difference being that the watch in contact with the skull was not quite so distinct on the right side as on the left. In another case, I have seen similar symptoms of deafness and definite vertigo produced by salicylic acid.

Treatment.—The direct treatment of labyrinthine affections is a subject for the special aural surgeon. I would only here indicate that, when there is evidence of an irritative process, blistering behind the ear sometimes affords very marked relief to the vertigo. Occasionally, there is evidence of a constitutional condition on which the aural disturbance is dependent. In some cases the patient is gouty, and there is reason to believe that a gouty change in the membranous labyrinth is the cause of the morbid action. This was the case in one of Mr. Hinton's patients, and also in one case which has come under my own observation. Marked relief is afforded under these circumstances by colchicum and potash. In rare cases, the vertigo depends on a syphilitic inflammation of the labyrinth. Such a case has been lately described by Moos, of Heidelberg.[1] One of the most severe forms of paroxysmal vertigo I have seen was in a child, with almost complete deafness and every sign of inherited syphilis. In all syphilitic cases, the specific treatment is, of course, required.

It has been just remarked that certain drugs have a marked influence on the organ or nerve of hearing. The effect of quinine induced Charcot to employ it, in full doses, in a case of auditory nerve vertigo, with some beneficial result. I have tried it, but have not found any marked effect was produced on the vertigo. The influence of salicylate of soda upon the equilibrium, which I have described, suggested its use in this disease. Equilibrium is maintained by the balance of opposing impressions; its overthrow is the result of the loss of that balance. In our ignorance of the way in which salicylate produces the disturb-

[1] Virchow, *Archiv*, vol. lxix., part ii., p. 313. The patient suffered from attacks of giddiness and noises in the ears; and, later, rapidly increasing deafness. *Post mortem*, there was found a small-celled infiltration of the membranous labyrinth, and especially of the ampullæ.

ance, it is conceivable that it may, in some cases, have such an influence as to counteract the morbid action, and lessen the disturbance of equilibrium. This it has seemed to do in one or two cases in which I have tried it. It does not remove the giddiness, but in some cases lessens its intensity. It has been given in doses of from five to ten grains three times a day. The patient with gastric ulcer, whose case has been narrated above, thought that she was better while taking the salicylate than when taking any other medicine. Its effect, unfortunately, seems after a time to become less.

One of the objects of this paper is to show that, in auditory nerve vertigo, other morbid conditions may concur with the aural condition in causing the vertigo. The knowledge of this will, in many cases, enable much relief to be given. The gastric disturbances are to a considerable extent under control, and, by their removal, the attacks of vertigo which they excite, although ultimately dependent on ear disease, may be much lessened in frequency and intensity. The most unremitting care in diet and regimen are, however, necessary. An actual attack, which has been produced by gastric irritation, may often be arrested by a good dose of an antacid.

Lastly, any undue sensitiveness of the gray matter of the equilibrial centre must be lessened. For this purpose, no remedies are so useful as the bromides of potassium and ammonium, and several observers have noted their utility in Menière's disease. It is probable, indeed, that bromine does more good in this condition than any other single medicinal agent. This fact affords another point of resemblance between epilepsy and paroxysmal vertigo. The effect of the bromide is in some instances increased by the addition to it of some other sedative, as belladonna. Other sedatives alone—opium, Indian hemp, gelseminium, hyoscyamus—have seemed to me without effect.

Auditory nerve vertigo is unquestionably, in many cases, a very obstinate affection; but, when the several factors in the individual cases are sought out, and as far as possible corrected, a considerable amount of relief may be afforded. In several cases that I have seen, immunity for long periods has been obtained. The patient, whose severe attacks were described at page 255, has had no severe attack since the commencement of the treatment, now a year ago. Occasionally, he notices slight unsteady feelings, "as if the ground were being tilted up a little." When this is the case, he takes a few doses of bromide of ammonium, carbonate of bismuth, and belladonna, and the symptom always vanishes. In another case, in which there were other indications of an irritable nerve-centre, bromide and bark produced an almost complete cessation of the attacks; and the improvement was subsequently maintained on a course of quinine only, although quinine had at first failed altogether to relieve.

It is on a recognition of the associations of auditory nerve vertigo, and their place in the pathology of the affection, that its treatment can be most effectually based.

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Injections of Carbolic Acid for Neuralgia.

Dr. MERTEN, of Neuwedell, reports (*Allgem. Med. Cent. Zeit.*, Sept. 6, 1877) four cases of severe neuralgia that were cured with surprising rapidity by one or two hypodermic injections of carbolic acid. In the first case, the patient, a hysterical young woman, had suffered for several months from strabismus and ptosis of the left eye, with diminution of the field of vision in the same eye by almost one-half. Ophthalmoscopic examination gave negative results. She was suddenly seized with intense neuralgia of the left malar nerve, for which twenty drops of a 2 per cent. solution of carbolic acid was injected over the check-bone. It caused at first intense burning pain, with redness and swelling at the point of injection, but one hour later all pain had disappeared. On the next morning there was no pain at all, the ptosis and strabismus had entirely disappeared, and the field of vision of the left eye had markedly increased. Unfortunately, the patient did not again present herself for observation. The second case was one of acute oöphoritis, with severe neuralgia of the external cutaneous nerve of the thigh, and intense pain about the anus on defecation. Two injections of a syringeful of the 2 per cent. acid solution permanently

relieved all the pains. The third case was one of suppressio mensium and sciatica. Two hours after the injection of a syringeful of the above solution the pain ceased entirely and did not return. Menstruation was subsequently regular. The last case was one of myalgia of the right side of the neck, consequent on exposure to cold. A single injection of the 2 per cent. solution produced a cure.—*Practitioner*, April, 1877.

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Action of Faradaic Currents in Cutaneous Anæsthesia.

M. Bourceret gives (*Archives de Physiologie*, No. 6, 1876) a series of cases of muscular atrophy both with and without cutaneous anæsthesia, that have lately occurred in Professor Vulpian's clinique at the Hôpital de la Charité. One of these cases was a washerwoman, æt. 43, married, and had had three children. Her occupation caused her to put her hands and arms alternately into hot and cold water. In 1873 her right arm suddenly swelled, and soon after she suffered from pemphigus. A week subsequently she slept with her head resting on her left arm, and lost the sensibility and to some extent the motility of the hand and arm, and this had lasted for six months. The treatment, which was continued for eighteen months, consisted in the application of frictions and the administration of potassium iodide, and though the hand and arm were somewhat atrophied, she recovered sufficiently to resume her work. Five months after the right arm was observed to be insensible, and she burnt herself on several occasions without perceiving it. About this time she experienced a difficulty in swallowing and transient attacks of aphonia. She now applied to M. Vulpian for relief. The left thumb was found to be adducted, the index could not be completely extended, the other fingers were strongly flexed, the thenar and hypothenar eminences, with the anterior part of the forearm, were flattened and atrophic. There were also symptoms of atrophy of the right hand and arm, and on both sides the power of the muscles was reduced. The extremities were cold. The tactile sensibility was diminished. Iodide of potassium and electricity were ordered. M. Vulpian considered that the woman's business predisposed her to disease, that she had had a true traumatism; and diagnosed radial paralysis, due to compression, followed by degeneration of the nerve, consecutive alteration of one-half of the cord, and subsequent extension of the lesion to the opposite side of the cord; the disease was advancing upwards, as shown by the implication of the glosso-pharyngeal nerve. In applying the electricity M. Bourceret employed an induced current, one of the electrodes being terminated by a moist sponge, the other by a metallic brush. Each sitting lasted for five minutes, and only took place every other day. Great improvement, with one relapse in the course of three weeks, and though the patient was obliged to leave the hospital before the cure was complete, yet sensibility had almost completely returned to its normal condition.—*Practitioner*, April, 1877.

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On the Effects of Cutaneous Faradization in Hemianæsthesia.

M. Grasset found (*Archives de Physiologie*, December, 1876) in confirmation of the observation already made by M. Vulpian (*Archives*, No. 6, 1875), that local faradization produced temporary return of sensibility, and even hyperalgesia, of the affected side in hemianæsthesia. This return of sensation was complete; sight and taste, which were also destroyed, were brought back. The electric excitation of any part of the skin seemed to have the same effect. —*London Med. Record*, April 15, 1877.

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On the Respiratory Sound, Normal and Abnormal.

MM. A. Bondet and A. Chauveau (*Revue Mensuelle de Médecine et de Chirurgie*, March, 1877) availed themselves of a somewhat rare opportunity of experimenting on a horse suffering from pneumonia; and they believe their experiments to possess especial interest, as demonstrating the fundamental

principles upon which the explanations of the chief respiratory sounds heard over the walls of the chest rest.

The experiments were made in the Veterinary School at Lyons so long ago as 1862, but by some inexplicable oversight they are only now published. The subject was a young and vigorous mare attacked with pneumonia of the left side, attended with such alarming symptoms that death was thought imminent. All over the right side there was considerable increase of the natural inspiratory murmur; no sound with expiration. On the left side, over the upper half, there was also exaggerated inspiratory murmur; over the lower half this murmur was completely abolished, and replaced by a double tubular blowing sound. The inspiratory part of the tubular sound was longer and softer than the expiratory portion, which was louder but shorter.

Auscultation of the trachea showed that the inspiratory and expiratory sounds heard over this tube, though louder, possessed exactly the same characters as the tubular sounds heard over the consolidated lung.

The experiment was commenced by making an incision in the trachea in the middle of the neck, about 20 centimetres long. The lips of this wound in the trachea could be separated by the index finger of each hand, so as to make a large opening in the tube, more than equal to its transverse diameter; this opening gave free passage to the air during inspiration and expiration, and allowed no air, or only an insignificant quantity, to pass by the larynx. The entrance of blood and mucus into the trachea and bronchi as a consequence of this operation, and the distress of the animal, the convulsive efforts at breathing, the loud mixed râles which accompanied them, completely prevented the authors from continuing their intended comparison of the breath sounds before and after the operation. The next day, however, finding to their surprise the animal not only alive but better, and the physical signs precisely the same as before the operation, and uncomplicated by râles of any kind, they were able to go on with their experiments. 1. On listening over the hepatized portions of lung with the *trachea closed*, they heard the sounds already described; with the *trachea opened* the inspiratory tubular sound disappeared, and the expiratory sound was much shorter and weaker. 2. Exactly the same phenomena were observed on auscultating the trachea below the incision, when this was *opened* or *closed*. 3. On auscultating the sound lung and the sound portions of the diseased one, no alteration was observed in the natural respiratory murmur, whether the trachea were opened or closed; if anything, the murmur was a little increased in intensity at the moment when the trachea was opened. 4. Sounds were artificially produced in the trachea by introducing into it a caoutchouc tube through the lips of the tracheal wound, and blowing through a membranous reed fixed to its free extremity, thus imitating, as nearly as possible, the conditions under which the voice is produced, with the view of comparing the conducting power of the healthy and the hepatized lung. Over the hepatized portion of the left lung, the sounds were heard with the greatest clearness. Over the healthy portions of lung, the transmission of the sounds was wholly arrested.

These experiments were several times repeated, with the same results. Subsequently, when there arose profuse bronchial secretion, the tracheal sounds would suddenly cease to be heard over the hepatized lung; at the same time there would be noticed entire absence of the tubular or any breath sound; but if the animal coughed and expectorated, all the tracheo-pulmonary acoustic phenomena returned as clearly as before.

From these experiments MM. Bondet and Chauveau draw the following conclusions: 1. In the horse, healthy lung-tissue is a very bad conductor of sound; it, indeed, completely interrupts the sounds produced in the trachea. 2. The normal inspiratory murmur originates in the lung-tissue itself; it arises where it is heard. From other experiments, they conclude that it is caused by the entrance of air into the *infundibules*. 3. Hepatized lung-tissue is a good conductor of sound, since it brings clearly to the ear, applied to the chest, the sonorous vibrations artificially produced in the trachea. The mechanism of this conduction may be thus analyzed: 1. The vibrations are thus transmitted to the pulmonary parenchyma not by the walls of the air-tubes, but by the air

contained in them. 2. Arrived at the ultimate ramifications of the bronchia, these vibrations are conducted to the ear by the pulmonary tissue and the chest-wall. 3. The tubular sound heard over hepatized lung is a transmitted sound originating at a distance from the spot where it is heard. 4. The tubular breath-sounds of pneumonia and tracheal sounds are the same phenomena heard at different spots, and alike produced by the passage of air through the aperture of the glottis. The modified expiratory sound heard when the trachea is opened is produced at the lower orifice of that tube.—*London Med. Record*, April 15, 1875.

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On Chronic Pneumonia and Phthisis.

Dr. CARL FRIEDLÄNDER (Virchow's *Archiv*, Nov. 1876) gives an account of his prolonged observations of the process of tissue-changes in the lungs of dogs after severing the recurrent laryngeal nerves. The effect of this operation is to permit the entrance of foreign bodies into the air-passages, and hence to set up inflammatory changes in the trachea, bronchi, bronchioles, air-vesicles, and parenchyma of the lung. He has operated on seventy-two dogs, of which number only nine remained free from pneumonia. The changes he observed were, first, hyperæmia and œdema, which disappeared and passed into red hepatization, which also might disappear or pass into "transparent gray" desquamative hepatization, which might go on to atelectasis, or remain as such for as long as a month, but never underwent caseation; in other cases the red hepatization passed into a small-celled "whitish-gray" hepatization, which rarely resolved itself, but as a rule underwent caseous degeneration. He does not assert that desquamative pneumonia in man never becomes caseous; but, at any rate, he says Buhl's inclusive assertion that desquamative pneumonia only undergoes caseation, cannot, he believes, be maintained. He draws especial attention to the changes in the bloodvessels as the most important feature in the production of caseation; in the round-celled infiltration referred to, the interstitial lung-tissue shares in the process, and the walls of the vessel undergo the obliterative endoarteritis described by him. (See *London Medical Record*, 1876, page 587.) He also gives an account of an interesting development of epithelium in the walls of the bronchi. He has found the same appearances in the human lung in a case of chronic pneumonia. He says the epithelium is in direct continuity with the surface layers, and that such a proliferation is not peculiar to cancer, but may take place wherever granulation-tissue and epithelium are in contact.—*London Med. Record*, April 15, 1877.

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On Adenoma of the Liver.

MM. KELSCH and KIENER contribute an interesting article to the *Archives de Physiologie* (September and October, 1876) on two cases of true adenoma of the liver. They commence by referring to the published cases, and distinguish between those in which the so-called tumour appears to have been a supplementary lobule of congenital origin, and true new formations, such as that reported by Griesinger. According to MM. Kelsch and Kiener, the growth begins by the augmentation in size of a single acinus, which becomes circumscribed by a zone of embryonic connective tissue, the central vein is dilated and hypertrophied, the rows of hepatic cells thicken and form cylinders anastomosing with one another by processes budding out from their sides; or, by the appearance in an acinus of a miliary nodule composed of a little group of epithelial cylinders, larger, paler, and more readily coloured by carmine than the normal hepatic cells, but continuous with the surrounding trabeculæ, which it compresses and atrophies. This atrophied liver-substance is replaced by a band of connective tissue circumscribing the tumour; the cylinders multiply by budding, and form a regular network, differing from the ordinary type in not converging towards a central vein; the cells have one or more nuclei, with single or double large bright nucleoli; the cell-protoplasm is finely granular, generally destitute of pigment, coloured readily with carmine, and cleared by

acetic acid; many cells are in process of proliferation, endogenously, or by fission; there are besides some round cells, two or three times as large as the normal liver-cells, containing many nuclei, and sometimes young cells. some small polygonal cells, and occasionally cells constricted in the middle, the constriction affecting both protoplasm and nucleus. The nodule, having developed in either of these ways, is not slow to undergo modifications of structure which differentiate it more decidedly from the normal tissue of the liver; the trabeculæ or cylinders increase in size, and bend upon themselves; some are solid, some are pierced by a central lumen containing fatty granules and scattered polygonal cells. The peripheral cells of the hollow cylinders, and the central cells of the solid cylinders, become filled with fatty granules, and are often coloured by bile-pigment; the blood circulates in irregular crevices, which seem to have no proper walls, but lie between the cylinders; sometimes the vascular network converges towards a central vein with a distinct wall, but usually not. The nodules finally undergo fatty or colloid degeneration. An interstitial hepatitis accompanies the growth of the tumour; it appears as a perilobular cirrhosis following the course of Glisson's capsule, and rarely passes into the acini. The vessels are numerous, dilated, and hypertrophied, or embryonic in character; in one case there was an extraordinary development of bile-ducts, which were seen to be in direct continuation with the existing hepatic trabeculæ. The authors promise in a future paper to discuss the bearings of these observations on the development of the liver.—*London Med. Record*, April 15, 1877.

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On the New Formation of Biliary Canaliculi.

MM. KIENER and KELSCH (*Archives de Phys.*, Nov. and Dec. 1876) have an article on the recent observations on this subject, adding original matter of their own. They recapitulate as follows:—

1. The new formation of a network of intra-acinous biliary canaliculi in hepatitis appears to depend on many conditions, of which the most important and the most general is a parenchymatous alteration characterized by the proliferation of cells, and the atrophic tendency of their protoplasms.

2. The so-called hypertrophic cirrhosis—that is to say, that lesion characterized by an intra-acinous neoplasia of an embryonic and very vascular nature—when it is associated with the parenchymatous alteration (an association frequently realized in malarial hepatitis), may be considered as a condition favourable to the genesis of the biliary network, on account of the moderate compression which it causes upon the hepatic trabeculæ undergoing cellular hyperplasia.

3. The catarrh of the bile-passages, such as one observes in hypertrophic cirrhosis with jaundice due to biliary obstruction from gall-stones and other causes, ought also equally to be considered as a condition predisposing to the new formation of the intra-acinous biliary network, on account of the special character of the secondary hepatitis which it provokes.

MM. Kiener and Kelsch finally review shortly the physiological relations of their observations, and, referring especially to the hypothesis of the liver being formed on a tubular plan, they point out that these researches show that when the hepatic trabeculæ undergo hypertrophy they tend to form themselves into tubes; when, on the other hand, they atrophy, the tendency is to form biliary canals; and they remark that the tubular hypothesis affords an explanation of these otherwise inexplicable pathological phenomena.—*Lond. Med. Record*, April 15, 1877.

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A Case of Rupture of the Gall-bladder.

Dr. CIOCONE gives the history of the case in *L'Independente*, 1876. The subject was a countryman, aged 51, who had never suffered from any illness. One day, two hours after his usual meal, he was suddenly seized with violent pain in the abdomen, and vomited his food along with a watery and a greenish

fluid. When seen, there was much depression; he had profuse cold sweats, and lay on his back with the legs drawn up; the abdomen was contracted, the breathing was slow and deep; there was no trace of wound. The temperature was lowered, the pulse small and intermittent; he had a sensation of pain all over the abdomen; there was neither meteorism nor tympanites. In other respects there was nothing abnormal. By a process of exclusion, Dr. Ciccone arrived at the diagnosis of rupture of the liver, although there was no wound; and thought that it might have been the result of some forcible efforts which had not attracted the patient's attention. In a short time he had repeated fecal vomiting and obstinate constipation; at the end of forty-eight hours, general icterus appeared, and was followed by death, the intellect being retained to the last.

At the necropsy, the gall-bladder was found to be detached from its fossa in the under surface of the liver; it was attached only by a thread of peritoneum, and presented a recent laceration, without any signs of ulceration..—*London Med. Record*, April 15, 1877.

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On Podophyllin in the Treatment of Habitual Constipation.

Dr. ROUSSELET, in the *Gazette des Hôpitaux*, states that this treatment was at first unsuccessful in his hands, which he attributes to the bad preparation of the drug; for afterwards, by using only the pills sold in the druggists' shops under the name of podophyllin pills, he was invariably successful. He believes, however, that the method of administration had the greatest part in the successful result of forty-seven cases recorded by him. He lays special stress on the duration of the treatment, which is generally too brief. He reckons that from two to three months, according to the duration of the constipation, are required to insure regular and permanent habits; and it is necessary to assist the formation of these habits by soliciting action of the bowels every day at the same hour. He begins with a daily pill containing one-fifth of a grain, increasing the dose by one pill, if necessary, until the desired effect is produced, and then continues the dose for a fortnight. He then only prescribes the dose every two days; the next week every three days; and so on, increasing the intervals by a day each week. He prefers that the medicine should not be taken in the usual way, at bedtime, but at the last meal, with the soup. He also recommends that action of the bowels should not be solicited till after breakfast, as the best means of establishing and keeping up the habit.—*Lond. Med. Record*, April 15, 1877.

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The Mechanical Treatment of Skin Diseases.

Professor AUSPITZ (*Archiv für Dermatologie und Syphilis*, 1876, 4 Heft) finds the use of India-rubber clothing advantageous in skin diseases attended with dryness and itching, and testifies to the production of eczema by the too frequent use of baths. In infiltrated eczema of the ears, forehead, neck, extremities, and especially of the soles and palms, he has seen good results from rubbing with a soap containing sand, or with pumice-stone. The same treatment is sometimes used with advantage in prurigo. For lupus, he finds excision or circumcision of the skin the best treatment, when it can be efficiently carried out. Lupus-tubercles he stabs with a sharp instrument dipped in a solution of iodine in glycerine.

Lupus erythematosus he believes to be a cell-infiltration from the capillary vessels, and not a process specially connected with the sebaceous glands. The central depression does not always exist, and when it does exist it does not always correspond to a follicle. The treatment he has found of most advantage is to remove the crusts with oil or soap, scrape out the infiltrated parts with Volkmann's scoop, and cut the vessels of the erythematous parts with lancets. When the disease is on the extremities, he macerates by an India-rubber covering. For flat epithelioma (rodent ulcer of older writers), he scrapes out the diseased tissue with a sharp scoop, repeats the operation after two days, and then applies an arsenical paste.—*London Med. Record*, April 15, 1877.

A Case of Zoster Frontalis Traumaticus.

Dr. KINNICUTT (*Archives of Dermatology*, Jan. 1877) relates the following case: A boy, aged 13, was struck by a hard ball directly above the left eye. On the seventh day following the accident, he complained of a sharp shooting intermittent pain in the course of the distribution of the frontal branch of the left ophthalmic nerve, and strictly limited to this region. This was followed in three days by patches of redness similarly limited, which were succeeded by groups of flattened vesicles confined to the region supplied by the nerve. He was first seen after the appearance of the herpetic eruption, and there was then no scar or other mark at the seat of injury.—*London Med. Record*, April 15, 1877.

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The Etiology of Psoriasis.

Professor KOBNER (*Archiv für Dermatologie und Syphilis*, 1876, 4 Heft) vindicates against Dr. Wutzdorff his priority in regard to the doctrine that local manifestations of psoriasis depend on irritation of the skin from outward causes, a certain constitutional predisposition in the patient being presupposed. He has found that, in the squamous syphilide, new eruptions cannot be produced artificially.—*London Med. Record*, April 15, 1877.

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On the Treatment of Psoriasis by Jaborandi.

Dr. LALOY, in his *Thèse de Paris* (21 Decembre, 1876), gives an account of the experiments made by Dr. Lallier at the St. Louis Hospital on the treatment of psoriasis by jaborandi. These experiments included four cases of psoriasis in which jaborandi, whilst producing its usual physiological effects, did not induce any improvement in the cutaneous affection; the appearance of the eruption was modified, but without any tendency to cure.—*London Med. Record*, April 15, 1877.

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On the Treatment of Psoriasis by Applications of Acetic Acid.

Dr. JANSEN, a Belgian army surgeon, has tried on an artilleryman suffering from psoriasis, the method of treatment recommended by Dr. Buck of the Lubeck hospital (*Archives Méd. Belges*, Decembre, 1876). The method is as follows. After having given a warm bath to soften the patches, the scales are removed by a small stiff brush. The acetic acid is then applied over the affected parts by means of a sponge or paint-brush. The parts will then soon be seen to become pale, then injected, and slightly puffed up. The patient then complains of a smarting sensation, which generally lasts about half an hour. The crusts come away. At certain points they do not reappear after the fifth or sixth application; at others they are reproduced during a longer or shorter period, but they are thinner every time. Dr. Jansen finds it advisable to make one application only in twenty-four hours; and when the injection is persistent, he waits two or three days before renewing the painting. When, however, the patient is robust, and does not fear pain, it may be advantageous to keep up a certain amount of inflammation. This is sometimes accompanied by a slight hemorrhage, but often brings on a dissolution of the patches by suppuration. Dr. Buck uses fomentations of Goulard water whenever the symptoms of inflammatory irritation are at all strong. Applications of acetic acid on the healthy parts scarcely produce any effect. Careful watching of this treatment is of the greatest importance. If the application be made in an unseasonable manner, very serious consequences may ensue.—*London Med. Record*, April 15, 1877.

Surgery.

Wounds in Patients suffering from Heart-Disease.

For some years M. VERNEUIL has endeavoured to give prominence to the influence of constitutional diseases on wounds, and, at a late meeting of the Academy of Medicine, Paris, he presented a memoir on wounds in patients suffering from heart disease. In such cases, the symptom was not one of morbid conditions of the whole organism; one organ only was attacked, and one function only was disturbed; but every change in this function was felt throughout the whole animal economy. The obstruction to the circulation favoured the production of hemorrhage, and interfered with hæmostasis, granulation, and cicatrization; the changes in the blood, also, nearly constant when the affection of the heart lasts for a certain time, and arrives at a certain pitch, almost inevitably rendered repair imperfect. Finally, the great viscera eventually deteriorated when the central circulation failed, and real diatheses going on to cachexia resulted. As in diabetes and scrofula, a relation might be established between the condition of the heart and certain complications, which sometimes supervene on lesions, and which did supervene in two cases related by M. Verneuil. These were cases of wounds of the hand, and, though not serious at the outset, nevertheless, by a chain of complications, seriously imperilled life. In the first, a succession of hemorrhages of extraordinary persistence had to be combated; in the second, simple leech-bites gave rise to so serious anæmia, that syncope of nearly half an hour's duration ensued. Nothing capable of explaining these accidents could be discovered in the constitution of the patients, but they were both suffering from heart disease; and the hypothesis that the default of hæmostasis might be due to this affection was confirmed by the fact that, in one of the patients, the hemorrhage twice followed a violent suffocative attack. The intensity of the diffused inflammation of the inflammatory œdema in relation to the trifling nature of the primary lesions, was also very striking; and it seemed a logical conclusion that the wounds and the supervening irritative action caused premature appearance in the injured parts of the serous infiltration, which, at a later period, must have appeared in the other parts of the body. A third fact worthy of notice was the influence of the wounds themselves on the cardiac affections, which were aggravated, and prevented prematurely the symptoms of the last stage.—*Lond. Med. Record*, April 15, 1877.

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On Transfusion of Blood in Chronic Anæmia following Injury.

Mr. RICHARD BARWELL, Surgeon to Charing-Cross Hospital, prefaces (*Lancet*, April 21, 1877) a report of an interesting case of chronic anæmia following injury in which he performed transfusion, by the following remarks:—

Transfusion has been employed with great advantage in cases of hemorrhage, whether post-partum or from wound, but not, as far as I am aware, in that condition of system which may aptly be termed chronic traumatic anæmia—a condition of anæmia and bloodlessness produced by long-continued suppuration and by the waste of reparative processes larger than the patient's strength can support. In such states the sufferer generally eats but little; he may, perhaps, take a fair amount of stimulants, and may have quinine, iron, or other tonics administered. Yet, whether he eat little or much, or however he be treated, his strength diminishes day by day, his blood-supply gets smaller and smaller, until at last he has not enough to carry on the work of his body and its organs. In these conditions I have been constantly struck by the powerlessness to which the surgeon is reduced. The stomach is his only hold upon the patient's life, but the capacity for digestion and assimilation diminishes constantly. Assimilation simply means the conversion of food into blood; and I have long thought that if we could spare the stomach this work, and give blood ready-made, we might save many a patient and many a limb that would otherwise be lost. On

becoming acquainted, at the Medico-Chirurgical Society, with Dr Roussel's instrument, I felt the only scruples I had—namely, the fear of embolism and other such dangers—disappear.[1] Therefore, after having seen this instrument and carefully studied its action and advantages, I determined to put this idea to proof in the first case which seemed to me suitable. This occurred in the person of

J. D——, aged forty-four, who was admitted into Charing-Cross Hospital under my care on December 2, 1876, with a compound fracture of the tibia and fibula at the junction of middle and lower thirds: the external wound was nearly an inch and a half long, very jagged; its edges and the parts around were very much bruised.

The case was treated antiseptically, and, I believe, without any error or omission, yet the bruised parts sloughed, and suppuration set in; indeed, I hardly see how, in the condition of tissues, anything else could have happened. The man was of rather intemperate habits, and had a smart attack of traumatic delirium, requiring energetic treatment, whereby it was subdued in four days.

Feb. 1. The ends of the tibia, being necrosed, were removed with the saw, and the limb put up in an interrupted metal splint and plaster of Paris. In a few days the truncated bone-ends were granulating healthily; the wound contracted somewhat, though very slowly. Though therefore suppuration seemed not extending, yet repair was very slow, if it could be said to be going on at all. The granulations were pale and flabby, just capable of supporting their own life, but hardly of repairing large injury. He complained of constant dull aching at the part, which occasionally was severe enough to keep him awake. The man was getting weaker, paler, and more anæmic, the pulse smaller and weaker, the appetite less and more capricious. I therefore wrote to Dr. Roussel, who kindly acceded to my request, and came with one of his transfusion instruments.

28*th*. At 10 A. M. the state of the patient was as follows. He was pale, the lips and palpebral conjunctiva nearly colourless, and the eyes rather dull and sunken. He was very quiet, almost apathetic. Pulse 115, small, and weak; temperature 99°; urine pale, without any albumen; the appetite small, requiring much tempting. At 3 P. M. the vein was laid bare by Dr. Roussel; it was very small and contracted; nevertheless, that gentleman opened it. Then, his attention being required to other parts of the manipulation, he requested me to pass the canula. In this there was at first a little difficulty, partly owing to the contracted state of the vein, partly to the opening being made by one person and the introduction by another; a little blood therefore became effused into the cellular tissue. When the position of the canula was rectified, the man received from the arm of Mr. Watson (student) 8½ oz. of blood, being twenty-five strokes of the elastic ball. During the operation the patient's eyes became markedly bright and fuller, and his face flushed; his skin became warm and moist, after a little while perspiring freely; the pulse became fuller, stronger, and fell to 95. He complained of fulness and oppression at the chest; but after taking, as he was directed, two or three deep inspirations, this sensation disappeared. A quarter of an hour after the transfusion he was put to bed. He had some sense of fulness down the spine, and aching at the loins; otherwise was very comfortable. The granulations at the seat of fracture, which previously were pale and flabby, were now well coloured and of good consistence. The dressings were slightly blood-stained from rupture of some small vessel, but whether caused by movement or by the rapid influx of new blood cannot be determined. About half an hour after he was put to bed he had a slight rigor, soon followed by another,[2] and shortly after by copious perspiration. He felt very thirsty. Had no pain or discomfort. The sense of fulness at the back and loins had given place to one of strength, as he ex-

[1] I am bound to say that, since this paper was written, Dr. Roussel has told me that this form of anæmia has once or twice been treated in Russia by transfusion—a fact with which, till quite lately, I was not acquainted.

[2] Rigors are constant after successful transfusion; the small amount of them in this case is somewhat peculiar.

pressed it. The urine was abundant, odorous, loaded with lithates of a very light pink, but was perfectly free from either blood or albumen. In the evening his temperature was 102°; pulse 94, large and soft.

March 1. During the night he slept fairly well, waking up occasionally and rapidly falling off again. He ate a larger breakfast with more appetite than he has done for some time. Temperature 100°; pulse 98, same good character; he still perspires a little. The wound in the leg much healthier. During the day he had some headache; tongue rather coated; not inclined to eat dinner. Temperature (8 P. M.) 102°; pulse 110. Bowels have not acted.[1] Ordered half an ounce of castor oil.

2*d*. The aperient has not taken effect. He slept indifferently during the night; felt rather sick; had headache, and rather coated tongue. Slight icteroid tinge of conjunctivæ. Temperature 102°; pulse 100. He was ordered two grains of calomel, to be followed by a senna draught.

3*d*. Since the action of the purge he is much better; the tongue has cleaned; he has no headache; the pulse retains the character which it has had since the transfusion—large, full, and soft. He complains of some pain about the wound of the arm, which is rather inflamed.

5*th*. He was kept restless by pain at the arm; a local cellulitis has set in; the temperature is 102.1°; pulse 92, rather harder.

6*th*. Pus has formed a little above the operation wound; it was evacuated by a small incision, since which it has been comfortable. Temperature 99.6°.

14*th*. Steady improvement since the last report. He eats, sleeps, and feels well; temperature averages 99°; pulse remains as before. The suppuration about the arm has given a little trouble, and, perhaps, has kept his temperature a little higher than it would otherwise have been; but it is, I wish to point out, a mere local cellulitis, not phlebitis. The wound in the leg is filling up healthily, and there seems some amount of union between the bones. There has been no pain at the seat of fracture since the transfusion.

April. It appears scarcely necessary to report the case further, for, as the patient is doing perfectly well, it justifies the following remarks. Previous to transfusion, the man's vital forces, under the influences of shock of the accident, sloughing of soft parts, necrosis of bone, operation and very free discharge, were rapidly giving way—threatened, indeed, if the same rate of diminution continued, to become before long extinct. From the moment when he received fresh blood, all these conditions were changed. His strength, the action of his circulatory system and of his assimilative powers, have been restored. Any embarrassment, traceable in the headache, nausea, and coated tongue, points rather to excess of blood than to debility. It may be, that if the usual free evacuation had followed the transfusion those symptoms would not have arisen; but they may be interpreted otherwise. A person who has lost blood suddenly by wound, childbirth, or in any other way, suffers under what may be termed *acute* anæmia; the organs have up to the moment of the loss been used to a much larger amount of blood. On the other hand, the patient with an injury accompanied by its several debilitating sequelæ suffers from a *chronic* anæmia; the organs have been accustomed to deal with a small amount of blood. If to that small quantity several ounces of venous blood be suddenly added, it seems inevitable that certain organs having to do with the purification of venous blood may be temporarily embarrassed.[2] Probably, however, it is far better to compound with this very slight trouble than to transfuse only a small quantity with the possibility of conferring inadequate benefit, and having to repeat the operation; the absence of hæmaturia, be it observed, clearly showed that we had not put in more blood than the vascular system could hold.

Thus, therefore, it seems that the great benefit of transfusion in cases of debility after severe injury is by this case fully vindicated, and that in future it will become one of the recognized resources of surgery; that, instead of ex-

[1] Here, again, is a peculiarity, since after transfusion patients usually have a spontaneous copious evacuation.

[2] The oppression at the chest relieved by a few deep inspirations appears to support this view.

posing weakened, almost exhausted, patients to the dangers of secondary amputation, we may by this means save not only the life, but the limb; that we may, in fact, when the patient has exhausted all his own sources of power, bestow upon him a fresh supply, and start him on his work with new capital.

I cannot conclude without recording my high appreciation of Dr. Roussel's apparatus. The ingenuity of its plan, the care expended in the choice of material, and the mode of workmanship are all admirable. I must thank Dr. Roussel for his affability in assisting at this case and in teaching me to thoroughly well understand and manipulate his admirable invention.

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The Trephine in Relation to Cerebral Localization.

In the sitting of the Académie de Médecine for April 3 (*Bulletin de l'Académie*, No. 14), Prof. Gosselin read the report of a committee to which had been referred two papers of considerable interest. The first of these, by MM. Proust and Testelin, is entitled "A Contribution to the Question of Cerebral Localization," and consists in certain physiological conclusions based upon a recent surgical case. A man, nineteen years of age, was struck by a sabre-bayonet on the left side of the head. A deep wound with much bleeding ensued; but the man, after a short loss of consciousness, went on very well for twelve days. Then, however, important cerebral symptoms showed themselves, in the form of aphasia, monoplegia of the right arm, and almost complete paralysis of all the muscles supplied by the portion of the right facial nerve distributed below the palpebral orbicularis. Brought to the hospital four days later, the patient presented a contused, suppurating wound above the left ear, at the bottom of which was found a fracture, with obvious depression of the parietal. In the belief that the symptoms were due to this depression, the trephine was applied above and behind it, and by the aperture thus made three bony fragments were removed, some drops of pus mingled with blood also issuing. The dura mater was found intact and depressed, but soon rose to the level of the bony aperture. As soon as the operation was completed, some amelioration was observed in the symptoms of lesion of the nervous system; and this continued to increase, so that at the end of two months they had almost entirely disappeared.

The authors of the paper, having driven nails into the part of some skulls of subjects which was the seat of injury in their case, found the ascending frontal convolution and the adjoining portion of the third frontal convolution were the parts which were injured—these being, according to the researches of Ferrier and Broca, the central motors for the upper extremity and the face, and the seat of articulate language. M. Gosselin has himself lately met with a case from which analogous conclusions may be drawn. A man was brought in with fracture of the left parietal, with depression, and accompanied by hemiplegia and symptoms of slight concussion. The trephine was applied at once, and three pieces of bone were removed, one of which had wounded the brain. He soon died, and at the autopsy a large laceration of the brain was found on a level with the fissure of Rolando, implicating the upper part of the ascending frontal convolution, and the adjoining ascending parietal convolution. Facial hemiplegia and aphasia were absent, probably on account of the very high position of these lesions. These cases are confirmatory, as far as they go, of the ideas lately advanced concerning cerebral localization; but whatever may be the fate of these, it is certain from a clinical point of view, that there are in the brain, in the vicinity of the fissure of Rolando, points at which lesions give rise to paralysis or contractions limited to one of the opposite limbs, the face, and the organs of phonation.

The other memoir, by M. Lucas-Championnière, is entitled "The Indications derived from Cerebral Localization for the Employment of the Trephine." It is founded on the following case: A man, twenty-six years of age, was brought into the Lariboisière, having been subjected to violence of unknown nature, and remained there during five days in a state of stupor, with paralysis of the right arm and aphasia, which were soon followed by epileptiform convulsions of the other arm and both lower limbs. Trephining was practised over a partly cicatrized wound in the left parietal region, a fracture with marked depression be-

ing discovered, together with a splinter of bone penetrating the dura mater. After the operation the epileptiform convulsions recurred but once; the paralysis of the arm disappeared on the fourth, and the aphasia on the sixth day. In both this and the former case there is no means of deciding upon the nature of the lesion, nor any assurance that recovery might not have taken place without the trephine. M. Lucas-Championnière is of opinion that his patient suffered from a lesion of Ferrier's motor centres, and that these researches on cerebral localization will prove a powerful auxiliary to surgical practice. For, whenever these symptoms are developed, we may assume a lesion of some kind of the motor centres, for the removal of the cause of which the trephine may be applied, the point for applying which may be easily determined by the mensurations laid down by Prof. Broca, which enable us to recognize the situation of the fissure of Rolando, and of the frontal or parietal convolutions supposed by the symptoms to be in question.

Upon the conclusions drawn from these two cases by these authors Prof. Gosselin makes the following observations:—

1. In his opinion the researches of Ferrier and others are not likely to effect much change in the ideas which now guide surgical practice, our true guide in the use of the trephine being the existence of a compound fracture with depression, and that at whatever part of the cranium these may be present. In all cases of this kind, with grave symptoms, the prompt use of the trephine is indicated, because it can do no harm, as an open wound already exists, the enlargement of which does not increase the danger. It is of utility by favouring the issue of any blood that may be effused between the bone and the dura mater, and the removal of any splinters of bone that may be present, and by facilitating the discharge of any purulent collection that may form. So that its utility is based upon motives quite independent of functional disturbance of the motor centres, and which may operate in parts of the cranium which do not correspond in position with such centres. The surgeon is guided in its application by the wound and fracture, and requires no mensuration rules to enable him to find the fissure of Rolando.

2. But when there is no wound or fracture with depression, and symptoms indicative of lesion of Ferrier's centres set in, should the trephine be resorted to for their relief? Certainly not; for, in the first place, lesions of other parts of the brain—as the optic thalamus and the corpus striatum—may give rise to the same symptoms; and, secondly, recovery may take place without any operation at all, and is, indeed, more likely to do so when additional dangers have not been caused by making an aperture into the cranium.

3. The same abstention should be employed when there is fracture with depression without a wound. In two such cases in M. Gosselin's practice, the depression could be plainly felt in the parietal beneath the intact skin. In these cases there was neither hemiplegia nor aphasia, and both patients recovered. But supposing that in a similar case one or both of these symptoms were present, the trephine should not be applied, for the creation of a wound and exposure to the air always add to the danger, while it is never certain that the cure of the paralyses may not take place without such interference.

4. With respect to cases of fracture of the inner table of the skull alone, to which M. Sédillot has again recently called attention, they must be considered according to whether they are or are not accompanied by a wound. In the first case the signs are very obscure, for the denudation of the external table is not always present, and, when it is, does not always denote fracture of the internal table; and functional symptoms may be absent or not distinguishable from those produced by concussion or contusion of the brain. If the wound is in the parietal region, and accompanied by hemiplegia or aphasia, we may suspect lesions of the motor centres; but this is only conjectural, as the same symptoms may arise from more distant lesions. As this fracture of the inner table is almost exclusively produced by gunshot wounds, there is a strong presumption against its existence when the wound has been produced by an ordinary accident. Exploratory trephining, advised by M. Sédillot, is objectionable, as it creates a danger of suppurating osteitis, and may prove superfluous as well as dangerous. Two conditions alone would seem to justify the use of

the trephine in these cases—viz., when the wound, situated at the parietal, is accompanied by symptoms referable to the motor centres; and at a later period, when symptoms arise indicative of a collection of pus between the bone and dura mater. As both these conditions are only observed some days after the accident, the trephine should not even in these be employed early, but only consecutively. In the very exceptional cases in which fracture of the inner table is unaccompanied by a wound, the trephine should never be applied primarily, as a cure is possible without its agency.

"I have no pretension, in this short sketch of the indications of the trephine, to have passed under review all possible cases, and especially exceptional cases. I have only sought to examine to what extent the innovations derived by M. Lucas-Championnière are justifiable; and I sum up my opinion on this point by saying that the new physiological views will prove auxiliaries to the diagnosis and interpretation of functional symptoms, but will only very exceptionally be adjuvants to therapeutics. And, if I have made myself understood, that is the case, because trephining should be regarded as an operation far more useful in the prevention of septicæmia and the retention of pus within the cavity of the cranium, than for remedying the lesions of the brain produced by fragments of bone or by other vulnerant bodies. In the present state of surgery, at least, we are sure of what we desire and what we do when we aim at fulfilling the first of these indications. But we do not know this, or only know it imperfectly, when we have the pretension of satisfying the second."—*Med. Times and Gaz.*, April 28, 1877.

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On Injury of the Eye.

In Zehender's *Monatsblatter* for February, Dr. H. Meyhoefer records four cases of injury to the eyeball; viz., a case in which the sphincter of the pupil was torn in four places by a blow; a case of penetrating wound in the ciliary region, with prolapse of the iris and part of the vitreous body, treated by suture, which terminated favourably, and three months after the patient was able to read $\frac{1}{10}$ and Jaeger 4 with the injured eye; a case of meningitis after excision of an injured eyeball which had not suppurated, terminating favourably; and a case of iridocyclitis occurring twenty-four years after the impaction of a minute fragment of a gun-cap between the ciliary muscle and sclerotic, with sympathetic symptoms in the sound eye, which vanished a few days after excision.—*London Med. Record*, April 15, 1877.

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Malformation of the Eyes.

In Dr. Zehender's *Monatsblatter* for January, Dr. S. Klein describes at great length a rare case of malformation of the eyes. Every trace of iris and ciliary processes was absent in both eyes, which also exhibited displacement of the lens upwards. The lower portion of the lens corresponded with the axis of the eyeball.

The subject of these malformations was a girl aged 20. The eyeballs were affected with considerable nystagmus, were very prominent, the upper portions of the cornea being covered by the lids which drooped. The disk exhibited a glaucomatous cup, and the refraction of the eye, examined by the ophthalmoscope through that part in which the lens was wanting, showed $\frac{1}{3}$ of myopia. When a child, this patient was able to read ordinary print, and learned to read; at the time when Dr. Klein saw her, her vision was only $\frac{1}{200}$ in the right eye, and $\frac{1}{200}$ with the left. Glasses only improved vision by enabling the object to be brought closer to the eye. Dr. Klein quotes several cases of malformation in confirmation of his view that all these abnormalities, including the glaucomatous cup, are congenital accompaniments of coloboma and aniridia.—*London Med. Record*, April 15, 1877.

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Case of Exsection of Half of Inferior Maxilla for Caries; Reproduction of Bone.

Dr. Robert A. McLean, Adjunct to the Chair of Surgery, University of California, reports (*Western Lancet*, April, 1877), the case of Lena T., aged

four years, who had been troubled with an enlargement of the left lower jaw since January, 1876. In the following May, the mother of the child consulted Dr. W. H. Mays, who found, upon examination, that there was extensive caries of the jaw, and sent the case to Dr. McLean for operation.

The general health of the child seemed fair. She was ruddy and had a good appetite. The left side of the face was greatly enlarged. Immediately beneath the angle of the jaw there was an opening through which pus escaped. There was also an opening in the gums behind the last molar tooth. The teeth upon the affected side were irregular, and in an advanced stage of decay. The probe, when passed into the external opening, came in contact with denuded bone in all directions. The mother stated that she first noticed a slight enlargement in January, after one of the back teeth had been removed. Pain was complained of, and the swelling continued to increase until March, when the skin broke, below the angle of the jaw, and a large amount of pus escaped. The pain now became less severe, but the face continued to swell on that side.

On May 21st, with the assistance of Dr. Mays and others, Dr. McLean removed the left half of the jaw. Chloroform having been administered, an incision was made down to the bone, commencing at a point an inch below the articular extremity, along the posterior border of the ramus to the angle, and then forward along the inferior border of the body of the bone, to a point an inch to the right of the symphysis menti. A vertical incision was then made in the median line of the chin, commencing above, at the lower border of the inferior lip, and passing downward to join the horizontal incision. The vessels having been ligated, the periosteum elevator was introduced into the anterior extremity of the wound, and, proceeding backward along the body and ramus of the jaws, the bone was easily cleared of its membranous investment. The periosteum had been so thoroughly separated by the effects of the disease, that no difficulty whatever was met with in disarticulating the bone. It slipped out of the periosteal pouch like a finger out of a glove. In order to preserve the contour of the chin and the lower line of teeth, Dr. McLean decided to remove the bone no further toward the symphysis than the second incisor tooth, although there was considerable carious bone extending an inch to the right of the median line. The bone was divided with the chain-saw, and removed. The tissues of the chin were next lifted from the remaining half of the jaw, which was carefully scraped, an inch to the right of the symphysis. Several small scales of bone, which were detached, were removed from this locality.

The edges of the incision were brought together, and retained with silver sutures, except at the point of junction of the vertical and horizontal incisions, where a small opening was left, in which was placed a tent to admit of drainage from the denuded surface of the remaining bone. The water-dressing was then applied.

Immediate union occurred, except at the place where the tent had been allowed to remain. A slight discharge continued for three weeks from this opening, and then the entire wound healed, including the opening behind the angle of the jaw.

Four months after the operation the deformity was so slight as scarcely to be noticed. The lines of union were almost entirely obliterated. The bone was reproduced to an extent sufficient to admit of perfect motion of the jaw and the performance of all the functions of the mouth. About this time she unfortunately contracted diphtheria, and died after an illness of thirty-six hours.

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On the Use of Podophyllin in Hæmorrhoids.

Dr. RIVIERE, in the *Gazette des Hôpitaux*, December 16, states that he has had fifteen cases which were most conclusive as to the value of podophyllin in hæmorrhoids. Amongst the constipated patients, for whom he prescribed podophyllin, many suffered from hæmorrhoids, which he attributed to permanent constipation; that is to say, to the congestion which was its natural consequence. Subject himself to hæmorrhoids, though not habitually constipated, Dr. Rivière tried the podophyllin on himself, and found immediate relief. The

hæmorrhoids again made their appearance, but were removed by the same means. He has since frequently employed the same method of treatment, and always with equal success, giving one or two podophyllin pills of one-fifth of a grain each, so as merely to soften the fecal mass. Encouraged by this success, Dr. Rivière tried podophyllin for chronic hæmorrhoids likely to necessitate operation. In these cases also he obtained immediate relief, and a cessation of all the usual distressing symptoms of this affection. The only drawback was the necessity for the daily administration of podophyllin. In some instances, however, the patients were able to leave off the use of the medicine for a long time. Some even were entirely cured.—*Lond. Med. Record*, April 15, 1877.

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Plaster-of-Paris Jacket in Lateral Curvature of the Spine.

At a recent meeting of the surgical section of the New York Academy of Medicine, Dr. Lewis A. Sayre read a short paper on lateral curvature of the spine, and demonstrated the method of applying the plaster-of-Paris splint to the body. He quoted the following paragraphs from the paper read by Dr. A. B. Judson before the Academy last year:—

"This distinguished feature of the explanation of rotation here proposed is the recognition of the fact, previously overlooked, that the posterior part of the vertebral column, being a part of the dorsal parietes of the chest and abdomen, is confined in the median plane of the trunk, while the anterior part of the column, projecting into the thorax and abdomen, and devoid of lateral attachment, is at liberty to, and physiologically does, move to the right and left of the median line."

"In lateral curvature would not a degree of relief be afforded by a similar application (referring to treatment of Pott's disease) of antero-posterior force, by which a part of the weight would be transferred to the posterior portion of the spinal column, which is prevented by its muscular and fibrous attachments from deviating far from its normal position?"

Dr. Sayre said that he would answer Dr. Judson's query by saying that the weight of the body should be transferred from the bodies of the vertebræ and sustained by the inequalities found on the entire trunk; and, moreover, such transference could be readily accomplished by means of enveloping the chest and abdomen in the plaster-of-Paris apparatus.

Dr. Sayre said that Dr. J. K. Mitchell, of Philadelphia, many years ago, practised the method of treating lateral curvature of the spine in children, by causing them to suspend themselves several times every day. The method fell into disuse, but was revived by Dr. Benjamin Lee, of Philadelphia. So far as the principle of treatment was concerned, there could be no doubt of its value, and by means of an immovable apparatus, an additional element of treatment could be introduced which marked a decided advance in orthopedic surgery.

The best results were derived by suspending the patient by the occiput and chin; but, in case this was not expedient, partial or complete extension could be obtained by passing a sling around the axillæ.

The apparatus and method exhibited by Dr. Sayre consisted of a tripod with pulleys attached, and when the patient was suspended, the plaster bandage was placed around the trunk, extending from the armpits down to and embracing the ilium on either side. After the patient was suspended for ten or fifteen minutes, he was taken down and laid on an air-mattress till the plaster became thoroughly hard. He was then in a condition to get up and put on his clothes. Previous to putting on the plaster, a closely-fitting, knit-cotton shirt was placed on the body. In cases where the deformity was high up in the cervical region, an additional apparatus was used for suspending the head. It consisted of an "outside jury-mast" of malleable iron, which was attached below to perforated strips of tin, and from above there depended a hook. The strips of tin were laid on the upper part of the back, and secured in position by successive layers of plaster bandage. To the hook above referred to a leather head-piece was attached, and in this manner any amount of traction could be made upon the head and neck.

In conclusion, Dr. Sayre said that the plaster apparatus in diseases of the spine was within the reach of any practitioner. It gave the best method hitherto devised for keeping the weight of the trunk off the diseased or weakened vertebræ; and, finally, it caused less discomfort than any other apparatus. —*New York Med. Journal*, May, 1877.

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On the Treatment of Carbuncle.

M. CHAVANIS (*Lyon Médical*, 31st Dec. 1876), in reference to a case of anthrax, in which he employed excision and cauterization with the chloride of zinc paste, and subcutaneous injections of carbolic acid, and salicylic acid internally, notes that on the whole carbolic acid does not seem to him to fulfil all its theoretical promise. Three cases of Raimbert's, one of Cezarl's, and his one, are favourable to the use of antiseptics; but it is not on so small a number of cases, in which the cure may be due to cauterization as much as to antiseptics, that a new treatment can be based. Cauterization is necessary; carbolic acid may also be employed as an adjuvant, in subcutaneous injections, compresses on the œdema, and also internally, without the pretension of being a specific against anthrax. In all respects iodine seems preferable.—*London Med. Record*, April 15, 1877.

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On the Treatment of Anthrax by Cauterization.

Dr. DELON has seen in Dr. Desprès's wards at the Cochin Hospital (*Thèse de Paris*, 24th Dec. 1876) four cases of anthrax treated and cured by cauterization. To these cases Dr. Delon adds another, which was under the care of the late Professor Dolbeau, in which excision and the actual cautery were employed. M. Desprès pursued the following method. He used as the destructive agent chloride of zinc, in the form of caustic amadou—amadou steeped in a solution of eighteen parts of chloride of zinc to fifteen of water. He commenced by making a crucial incision down to the bottom of the slough. He then separated the lips of the incision, and stuffed the bottom of the wound with small pellets of caustic amadou. If the slough were too deep to allow the caustic to be easily carried to the bottom, he cut out the four fragments, which allowed him greater facility of action. The caustic was allowed to remain twenty-four hours, covered with a poultice to subdue the inflammation. It was then taken away to allow the permanent application of emollients, if the cauterization seemed to be effectual; if not, a fresh cauterization must be performed.

M. Delon has also observed that in anthrax the temperature rises in proportion as the affection develops itself, and falls when the disorder is arrested.—*London Med. Record*, April 15, 1877.

Midwifery and Gynæcology.

Rupture of the Uterus and successful Gastrotomy.

Dr. HART, of Amsterdam, relates (*Gaz. Hebd.*, March 30) an interesting case of a lady, aged thirty-seven, who, with a narrow pelvis, was pregnant for the fourth time; the last two deliveries had been accomplished with difficulty by means of the forceps. After she had been on the present occasion in labour for some hours without the head making any advance, Dr. Hart was about to apply the forceps, when, after some violent pains, a discharge of blood took place, and the presenting part receded, the uterine contractions entirely ceasing. He resolved to perform gastrotomy, but was prevented by other engagements

from doing so until seven or eight hours after the rupture had occurred, at which time there was very severe pain in the abdomen, and the pulse was 125, but with some power. The fœtus (weighing four kilogrammes and a half) and the placenta were both found in the cavity of the abdomen. The uterus was completely contracted, and presented at the supra-vaginal portion of its cervix a laceration measuring three centimetres. No suture was applied to this, as no blood issued; and a considerable quantity of coagulated blood and amniotic liquid was sponged out from the cavity of the pelvis. The external wound was united by means of two silver sutures and eleven pins, and the patient recovered without any bad symptom, being able to go out on the thirty-third day after the operation.—*Med. Times and Gaz.*, April 28, 1877.

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The Treatment of Eclampsia.

In the *Archives de Tocologie* for December, 1876, Dr. LERICHE, of Maçon, relates a case of puerperal eclampsia in which an early operative intervention had a temporarily good effect, but did not avert a fatal result. The patient was a primipara, aged twenty, eight months pregnant. When she came under observation, she had been insensible for nine hours, and the eclamptic attacks were recurring almost without intermission. The lower limbs, the vulva, and hypogastrium were enormously œdematous, and the patient had a very anæmic appearance. The uterus was much anteverted, the cervix very high up, and difficult to reach; the external os admitted the finger, but it could not be passed through the internal os. The patient was placed under chloroform, and some remission in the frequency and the intensity of the attacks was thus procured. The author then pushed the fundus backward, and succeeded in hooking his index finger into the cervix, and by considerable effort bringing down the cervix into the line of the vagina. It was then possible, with some force, to pass the finger through the internal os into the uterine cavity. Continuous traction was kept up upon the anterior lip of the os, and gradually two and three fingers were introduced, and eventually, after a fatiguing expenditure of muscular power, the os was sufficiently dilated to admit the whole hand. Podalic version was then performed, and the fœtus extracted. The placenta was not expelled till after the lapse of an hour; and rather considerable hemorrhage took place. Immediately after the birth of the child, the eclamptic attacks were suspended, and did not recur for two hours. The stertorous breathing ceased, but the patient did not become conscious. At the end of the two hours a slight attack occurred, a second an hour later, a third after another quarter of an hour, and soon the fits again became almost continuous. Five hours after delivery Dr. Leriche left his patient, regarding her condition as hopeless. He afterwards heard that she had died on the fifth day after delivery, without having ever recovered consciousness.

In the same number are recorded two other cases of eclampsia. The first is that of a woman, aged thirty-four, pregnant for the third time, who had reached a little beyond the seventh month of gestation. On the night of August 25th she was suddenly seized with severe headache and epigastric pain, accompanied by impaired vision and vomiting. Soon after eclamptic attacks began to occur at short intervals, and she had fifteen during the morning of the 26th. A practitioner being summoned, immediately bled her to 500 grammes. The same evening she was admitted into the hospital. She was then in a state of deep coma; there was general œdema, and the urine was highly albuminous. The pulse was still firm. A second venesection of 500 grammes was performed. The intervals between the fits then became gradually longer, but she had five more before the evening of the 27th. On the morning of the 28th consciousness returned, but the death of the fœtus was ascertained. It had probably occurred on the preceding day. On the 29th and 30th the proportion of albumen was less, and the patient better. On the 31st, after prodromata resembling those before felt, two more fits recurred. A draught containing 4 grammes of chloral was then given. On September 1st the patient felt well, and the albuminuria had disappeared. On the morning of the 2d labour-pains commenced, and the albuminu-

ria reappeared. At 5.30 P. M. a dead and macerated fœtus was delivered; at 7 P. M. the twenty-third and last convulsion occurred, supervening on a severe after-pain and the expulsion of a clot. The next day the albuminuria had disappeared, and the patient rapidly recovered.

The second case was that of a primipara, aged forty, pregnant about seven and a half months. When pregnant about three and a half months, and therefore before any considerable pressure could be exercised by the uterus, she had œdema of the feet and legs, which gradually increased, and extended to the whole body. On the 25th of August she was attacked by severe headache; on the 27th she had a first attack of eclampsia. A week after, on September 3d, she had a second, followed on the same day by a third. On the 4th she was brought to the hospital. She was then conscious, and could answer questions. There was general œdema, and the face was red and plethoric. The urine contained a large quantity of albumen. The fœtus was still alive. She continued in the same state till the 7th, when the pulse rose to 120, and the tongue was much coated. In the evening she was attacked by severe dyspnœa, on which account venesection to 500 grammes was performed, and was followed by immediate relief. On the 17th labour came on; and on the evening of the 18th a dead and macerated child was delivered. Old and recent apoplectic patches, with portions of atrophic thinning, were found in the placenta. On the 19th symptoms of metro-peritonitis commenced, and the patient died on the morning of the 21st, two days after delivery.—*Obstetrical Journal of Great Britain*, April, 1877.

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On Mammary Lymphangitis of Newly Delivered Women.

Dr. Kœning (*Thèse de Paris*, 1876) considers that the first important indication is to avoid fissure of the breast: but if the lymphangitis be declared, it is then necessary, he says, leaving aside local bleedings and depleting measures, to have recourse without delay to compression. Compression he thinks an infallible means, which has succeeded in all the cases in which he has seen it employed.

The best proceeding is the following: The diseased breast is covered with a layer of cotton-wool, and a bandage is applied which is known in minor surgery as the bandage of Mayor, or the triangalar bonnet of the breast. The form of the bandage is a triangle, a yard in length from one extremity to the other, and fifty centimetres (nearly twenty inches) from the apex to the base. The base of the triangle is placed obliquely under the diseased breast, then one of its extremities is directed under the corresponding armpit, and the other over the opposite shoulder, and there united behind the shoulder blade. The apex of the triangle is then lifted in front of the diseased breast, it is carried over the corresponding shoulder, and firmly fixed behind.

Sometimes a linseed poultice is at the same time applied on the inflamed part.

The effects of treatment thus arranged are almost marvellous, the pain is immediately calmed; the inflammatory redness and the œdema are diminished at the end of a very short time.—*London Med. Record*, April 15, 1877.

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Five Cases of Complete Inversion of the Uterus; with Remarks on the Operation for Chronic Inversion.

At a late meeting of the Medico-Chirurgical Society of Edinburgh, Dr. J. Matthews Duncan read (*Obstetrical Journal of Great Britain*, April, 1877) the following very instructive paper on this rare affection:—

Some cases of partial uterine inversion have come under my observation, but the following five are all the cases of complete inversion which I have seen. Two of them are cases of acute inversion post-partum. Of these, one was fatal, while the other proved of only temporary and trivial importance. The remaining three are cases of chronic inversion post-partum. They occurred in my practice in the Royal Infirmary. Of the three, two were cured—one by forci-

ble taxis, and one by operation combined with taxis—while the third died after the operation of removal of the organ.

Case I.—Mrs. M., a fine healthy young woman, had been frequently under my care for various passing ailments. She had gone through a first pregnancy and subsequent confinement without any serious alarm being excited. She was residing in Perthshire during her second pregnancy, and enjoyed good health till she reached nearly the end of the eighth calendar month, when she was unexpectedly seized, on a Sunday evening, with violent and uncontrollable sickness and vomiting, which continued, with only brief intermissions, till her death on the following Saturday. On Friday I was summoned to visit her in consultation with Dr. Gordon. On the night preceding my visit she was described as having been most alarmingly ill, incessantly vomiting; pulse 130. On the evening of Friday, when I saw her, she was cheerful; her pulse 90; vomiting had ceased during the day; had been able to retain nutritious fluids; but she was very weak and exhausted, and in great dread of the returning sickness and vomiting. The pain of the latter efforts she described as very great, and as if her hips were being torn off. Ordinary anti-emetic treatment had been diligently pursued, and was continued. The bowels, which were habitually constipated had just been freely moved by turpentine, and many scybala discharged. It was resolved to induce labour, and I inserted into the cervix uteri a moderate-sized sponge-tent. She passed the night without great disturbance by vomiting; and as labour showed no signs, I departed for Edinburgh by an early train. When Dr. Gordon paid his visit, he withdrew the sponge-tent, and finding no indications of active labour, he ruptured the membranes. Labour now began and progressed rapidly, the child being born alive about 10 A. M. The placenta was spontaneously expelled almost immediately after the child, and the uterus became well contracted. She had much sickness during the labour, and delivery did not put a stop to it. About five minutes after delivery, flooding commenced, while the uterus was in an otherwise ordinary condition. But soon it became inverted; the flooding continued profusely, and she died about half an hour after the birth of the child.

When the alarming symptoms began after delivery, I was again telegraphed for, but of course did not arrive till some hours after death. Before I left the house, a post-mortem examination of the abdomen was made, by the considerate permission of the husband.

The uterus was within the vagina. When grasped by the hand, it felt as if of about the size of a small fœtal head. There was no, or very little, constriction at the base of the tumour formed by the internal os uteri. The cervix was elongated, thin, soft, and relaxed, not inverted, encircling the upper part or base of the uterine tumour. On laying open the abdomen, the organs were observed to be ensanguine, but otherwise healthy. Near the brim of the pelvis could be seen the opening of the peritoneal cavity of the inverted uterus, with the ovaries, tubes, and round ligaments arranged in it and upon it. The peritoneum was entire and apparently uninjured. In the right ovary was a thin-walled cyst of the size of a walnut.

I now made some experiments on the inversion. It was easy to pull down the uterus so as to make it procident. This produced inversion of the cervix. It was easy to replace the uterus in the vagina, and this produced replacement of the relaxed cervix. It was plain that the inverted uterus was, for every important reason, an inversion involving only the body of the organ. When replacement of the inverted uterine body was attempted, difficulty was experienced. The vagina and cervix uteri became elongated, under the replacing pressure, to a remarkable extent, and the hand and arm were buried deep in the vagina before replacement was commenced. It was effected with considerable difficulty. No disease was observed in the uterus.

Regarding this case a complete satisfactory history was obtained. The inversion was produced while the parts were under no handling or force from without the body. It appears to me to have been one of the kind called spontaneous passive inversion. Bleeding probably first occurred, distending the uterine cavity; then came vomiting, which was probably the source of the injurious pressure which introverted the organ, and simultaneously expelled

its contained accumulation of blood-clot. There was nothing in the symptoms or post-mortem appearances to indicate spasm of any part of the uterus, nor to indicate paralysis of a part only of the uterine body.

I find, in my notes of this case taken at the time, the remark that it was evidently best to replace by pressure on the middle of fundus, reinverting that part first.[1]

Case II.—Mrs. R., a fine healthy young woman, came to town for her confinement in November, 1865. She had already had two healthy children at the full time, the last born about two years before her present lying-in. Pains commenced about 3 A. M., and a well-developed female child was born at 7.10 A. M. There was no hemorrhage immediately or soon after the birth of the child.

The completion of the third stage was waited for, and the uterus kneaded, but the placenta did not show an edge at the os uteri. The cord was gently pulled, to ascertain if the placenta was free and removable, but it was found fixed. Presently, and now forty-five minutes after delivery, the patient complained of intense desire to make water, and of no other pain. A careful examination was immediately made. The uterus had disappeared from the hypogastrium, and only a small hard part could be felt low down on the right side. The finger, exploring per vaginam, discovered a broad flat surface, in dimensions like the top of a fœtal head. It was firm, and constituted by the fœtal surface of the placenta, the cord being inserted near its centre. Before I had time sufficiently to examine, the firmness of this projecting mass led me to suspect it was a descending tumour; but this idea was soon dispelled, and the inverted uterus fully made out. The cervix was not inverted, and was high up; its external os not readily discovered, and considerably above the level of the fundus uteri.

The uterus was easily reinverted, and the everywhere adherent placenta artificially separated. A little bleeding followed the separation, but was soon checked by only moderate uterine contraction, and it did not recur.

Intense rigours followed complete delivery. She made an uninterrupted good recovery.

This case appears to me to be an example of artificial active uterine inversion. Pulling at the cord commenced the inversion of the paralyzed placental insertion. That this part was paralyzed, or very inactive, is proved by the continued attachment of the healthy placenta. Then the body of the uterus, exclusive of the placental site, contracted and seized the central portion now projecting inwards, and expelled it, completing the inversion, and bringing on the feeling of strangury. In this case, replacement was so easily effected that no lesson could be derived from it as to the best method of proceeding.

Case III.—Mrs. M., aged twenty-four, admitted into the Royal Infirmary, October, 1871, has been married for two years, and has had one child about a year ago. She is very weak, pale, and anæmic. Complains of continuous loss of blood per vaginam, increased at what she regards as the monthly periods and by going about.

She had enjoyed good health till the birth of her only child. After this event, red discharge did not cease till February, and then it continued absent for three months. When it reappeared in May, she consulted a doctor, who told her that her womb was displaced, and attempted to replace it. She had been attended by a careful medical man, but only now was the nature of her case discovered. Previously it had not even been suspected.

The uterus was small, pear-shaped, deep red, easily made to bleed, not very sensitive to touch. It was entirely inverted, or nearly so, there being only a narrow rim of the lower part of the cervix in its natural position; but the entire cervix was easily replaced.

On 30th October, reduction by forcible taxis was attempted in vain by myself and Dr. T. Keith. The patient was under the influence of ether, and the

[1] This is not to be regarded as anything more than the expression of an opinion founded on an individual observation. On this matter, see McClintock, Diseases of Women, p. 79.

efforts at replacement were continued for an hour and a half. After the operation the patient suffered greatly from feverishness, derangement of the digestive organs, and rheumatoid pains in all parts of her body.

In December I used continuous pressure on the fundus with counter-pressure on the hypogastrium. The pressure was by a cup-shaped pessary attached to one limb of a Santorini tourniquet; while the pad on the other limb effected counter-pressure. To insure proper adaptation, the instrument required constant watching by an attendant. On the 1st December, after four hours' use of this instrument, I attempted for half an hour to replace the uterus; but in vain. On the 21st December, after continuous pressure by the instrument had been kept up by Drs. Hardie and Imlach for twenty-four hours, another attempt at replacement was made, in my unavoidable absence, by Dr. T. Keith. On removing the instrument, he found that it had only flattened the fundus. The patient was put under the influence of ether for an hour and three-quarters, and during that time efforts at replacement were continued, and at last crowned by success. Intense rigours, with prostration, came on at once, and she was very ill for a few days; but at no time did her condition excite serious alarm.

There was almost no discharge till the 22d January, when menstruation took place, and was, she believed, natural in all respects. Examination now discovered a patulous condition of the os uteri, but on the whole a healthy condition of the pelvic viscera. Especially, there were no adhesions or other source of fixation of the uterus, and its cavity was of normal length.

She was dismissed on 29th January.

Case IV.—Mrs. E., aged twenty-four, admitted into the Royal Infirmary, 28th April, 1876, is the mother of two children. Her last child was born five months before her admission. The delivery was natural, so far as she knows. Only she had a flooding an hour after it, and then the placenta was removed. She continued, she says, to lose blood for nine weeks, when some medicine prescribed by Dr. McIndoe arrested this flow. Ten weeks ago she had rigours and loss of blood; and she then weaned her babe. Since then she has twice menstruated profusely, and has had occasional bleedings at other times. The condition of the uterus had only recently been suspected and made out.

The inverted uterus is found occupying the upper part of the vagina. It is oviform, and about the size of a hen's egg, somewhat tender, smooth, and deep red in colour. Its mucus is slightly alkaline, and its epithelium is rounded, and somewhat tesselated. The neck of the tumour is a little smaller than the body, and corresponds to the internal os uteri; but by pulling on the tumour, the whole cervix can be inverted. After this is done, the cervical portion is easily replaced.

On 1st May, the patient being under the influence of chloroform, a strenuous attempt was made for about an hour to replace the organ by forcible taxis, but in vain. The organ could be forced within the cervix, the latter being elongated, but no further. Besides the hand, a repositor, consisting of a stick with a cuplike end, was used with apparent advantage. After this operation she was very ill for two days with pain and sickness and vomiting. The latter was attributed to the prolonged use of chloroform; and in subsequent operations ether was substituted for it, with the desired result of avoiding the extreme prostration and vomiting.

On 23d May, an hour was devoted to most vigorous forcible taxis, and on 30th May, an hour and a half; but in vain. The body of the uterus could only be pushed within the cervix. On 1st July the efforts were repeated, and continued for three and a half hours. Pressure was for the most part effected by the repositor, but occasionally the hand was used by myself, Drs. T. Keith, Stephenson, Underhill, and Cotterill, the whole power of the arms being exerted on pressure and counter-pressure.

On 2d August, in the presence of several foreigners, I incised the uterus, and effected a partial reposition, which subsequently became spontaneously complete.

The uterus was seized by the fingers and pulled down. The cervix became completely inverted and did not descend to the vulva but came very near it.

On the anterior surface of the organ, near the internal os uteri, a vessel apparently about the size of a small surgical probe, spouted gently, rising like a large pin's head. The uterus was now incised on its anterior surface by bistoury, the incision extending from just below the internal os uteri to a little above the middle of the body of the uterus, and being carried as deep as could be safely done without injuring the peritoneum; say, nearly a quarter of an inch. When the incision was held open, blood flowed freely from several openings, and somewhat jet-like. Now a similar incision was made in the posterior wall of the uterus. The organ was then treated in the usual way by forcible taxis with the hand. The body was first pushed within the cervix; but now, further pressure further replaced it, but with sensible free laceration of tissue, no doubt beginning at the wound or wounds. The replacement was effected as far as the incisions extended, but no further. The peritoneum did not give way so far as I could judge, and the subsequent history of the case renders this almost quite certain. The fundus uteri could be felt as a shallow cup whose bottom the finger—covered, of course, by intervening textures—could reach from above. But its shape and its newly-acquired extreme freedom of movement, in consequence of the lacerations, rendered it very difficult of management with a view to reposition. Desperate attempts were made, but in vain. To this difficulty the only moderate dilatation of the cervix uteri partly contributed.

After this operation the woman was not nearly so ill as after the first attempt at replacement under chloroform. Vaginal lotions of carbolic water (1 to 50) were used very gently twice daily. There was no noteworthy bleeding after the operation, and during her recovery there was only scanty purulent discharge.

On 11th August the inverted fundus could still be felt within the cervix. The next examination was made many days afterwards, and the organ was found all right. On the 9th of September she left the hospital. In November she returned to show herself, and was found very well. At no time were there any uterine adhesions or other source of fixation of the womb. The uterus was mobile, and of ordinary shape, admitting the probe two and a half inches.

Case V.—M. A. R., aged thirty-five, unmarried, mother of one child born fourteen years ago, was admitted to the Royal Infirmary in July, 1876. She says she had an easy confinement, that the after-birth came away of itself, and that when her medical attendant left her she felt well. Subsequently, however, on the same day, she suffered severely from vomiting, pains, and inability to pass water. Her urine was not drawn off till two days had elapsed, and the catheter had to be regularly used for this purpose for three weeks; and during all this time she had great losses of blood. For eleven years subsequently she had either losses of blood or a white discharge. During the last three years menstruation has been more regular, but she has felt exhausted and unfit for her work as a domestic servant. Her disease was diagnosed soon after her confinement, and several attempts have been made to cure her. She is weak, pale, and anæmic.

The condition of the uterus was found to be exactly as in the former case (IV.) in every respect; only, when pulled down by the hand, it descended further—that is, beyond the vulva; and not only the neck of the organ, but the upper part of the vagina became inverted. Several energetic attempts to replace by forcible taxis were made in vain, the hands being used alone for pressure and counter-pressure, or the repositor taking the place of the internal hand. From the 8th August to the 18th September the taxis was well applied by Dr. Church every day for from twenty minutes to half an hour, but without any change. The body of the uterus is easily, after a time, returned within the cervix, but no part of the body becomes replaced. On 19th September the patient was anæsthetized, and I incised the uterus as in the former case, continuing the incisions, however, higher up or to within half an inch of the upper margin of the fundus. Most powerful efforts were immediately thereafter used to replace by forcible taxis, but in vain. From the operation she subsequently suffered little, making a good recovery.

On 19th October I proceeded to remove the organ. After pulling it by the

volsella down to the vulva, I transfixed the cervix close to the internal os uteri by the ordinary instrument for hemorrhoids, carrying a loop of strong twine. The cervix was now ligatured on each side with all the tightness my hands could produce. Then I cut off the uterus by bistoury about a quarter of an inch above the seat of ligature. Previous to cutting off, the cervix was seized by the volsella below the ligature, to prevent premature retraction. The surface of the incision was whitish, like a section of cartilage, and several vessels bled freely. The hemorrhage was, however, easily commanded by compression by the volsella. The cut surface was cauterized by a red-hot steel cautery, and the tendency to bleeding arrested. In the middle of the section the Fallopian tubes could be seen and pulled out for a little, not being fixed by the ligatures. The cervix was now returned with the volsella affixed. The woman was made comfortable. The volsella was removed in about two hours after the operation, and the woman placed in bed at 3 P. M. There was no bleeding. Severe sickness and retching, which produced pain in the lower part of the belly, came on immediately after the operation and lasted for two days. At 8 P. M., pulse 100; temperature 98°. Urine drawn off.

October 20. I removed the ligatures which had slipped over the stump of cervix. Noon: pulse 108; temp. 97.8°. Has very little pain or tenderness. Passes her urine.

21*st*. Has had a good night. Abdominal pain less. Noon: pulse 104; temp. 100.2°.

22*d*. Patient's condition favourable. Temp. 99.8°.

23*d*. Patient well in the morning. About 9 A. M.—Temp. 99°. Soon after this a rigour, which was duly treated by Dr. Church. 11 A. M.—Pulse 134; temp. 100°. At 9 P. M.—Pulse 100; temp. 99.8°; resp. 18. After this she appeared to get on very well till

28*th*. Morning: Pulse 100; temp. 99.8°. Pain in left groin. Some tenderness of abdomen. Considerable discharge of pus per vaginam, which was, as on one previous occasion, washed out with tepid carbolic lotion. Evening: Pulse 118; temp. 102.8°. From this time she became progressively worse, and died on the 29th.

This case was probably one of spontaneous active uterine inversion. The fatal event I am disposed to attribute to an attack of severe and general peritonitis, connected with the effusion of blood between the bladder and rectum, which had undergone decomposition. This effusion of blood appears to me to have taken place, probably soon after the operation, from the Fallopian tubes which had become spontaneously retracted from the embrace of the ligature. Had I foreseen this casualty I would have fixed the cut ends of the tubes to the edge of the wounded cervix. I may add that the cervix had spontaneously become replaced, except a small tongue of tissue mentioned in the account of the autopsy.

Autopsy by Dr. Wyllie, 31*st October*.—The body well nourished. The peritoneal sac contained about one pint of a dirty gray purulent fluid, and the bowels were coated with recent lymph, by which some of the intestinal folds were matted together. Within the pelvis, the fold of Douglass was filled with a tarry blood to the amount of three ounces. This blood was limited to the pelvis by the adhesions of the folds of the ileum, the sigmoid flexure, and the great omentum, to each other and to the upper part of the bladder, rectum, and the wall of the pelvis at its brim. Within the cavity of the pelvis, the space containing the blood was lined with a layer of tough laminated blood-clot, about half an inch in thickness. This layer covered the posterior surface of bladder, anterior surface of rectum, the upper part of the vagina, and remains of the uterus. On scooping out from the pelvis the whole of the viscera, and removing them for examination, the following was found to be the condition of the parts:—

1. The body of the uterus was entirely absent, having been removed by operation at its point of junction with the cervix. 2. The cervix was about three-quarters of an inch in length, and the external os was quite patulous, admitting the finger easily. Into the upper part of the cervix there projected downwards from the posterior wall a small leaf-like remnant of the uterus, about

three-quarters of an inch in diameter and a sixth of an inch in thickness. The upper extremity of the cervix was covered over and shut off from the abdominal cavity by the layer of blood-clot above described; but when this was removed, the finger could be passed from the vagina through the cervix into the peritoneal sac.

The liver weighed 3 lbs. 15 oz., and was natural. The spleen was large, weighing 1 lb. 2 oz.; its substance was firm.

The kidneys weighed 7 and 6½ oz. respectively. They were exceedingly anæmic, and rather œdematous. They contained a number of small serous cysts.

The heart was natural, except that its chambers and auriculo-ventricular orifices were slightly dilated.

The lungs were anæmic, but otherwise natural.

Although I consider myself very fortunate in having met with so many cases of complete uterine inversion, there is no subject for whose satisfactory study I desiderate more intensely further experience. This leads me both to bring my concluding remarks within narrow limits, and to speak on some points with diffidence.

On one point I feel quite assured—namely, that the uterine cervix has no important part to play in this disease—that complete inversion of the uterus is a condition of the body of the uterus, and that the condition of the cervix is of trivial import. It may be inverted, or it may not. If it is inverted, it is easily replaced, and its replacement does not facilitate the replacement of the body of the organ. This statement is fully illustrated and confirmed by the cases I have just recorded. It is also illustrated by the most ordinary experience in confinements; for in them, inversion of the cervix[1] is a very frequent occurrence, and one to which I know no case or circumstance lending importance. In most writings on inversion,[2] even the os uteri (externum) is considered as an injurious constrictor. This I hold to be an error, and I indeed exclude the whole cervix from having any place of importance in the disease.

It is well known that mistakes in the diagnosis of this displacement, even when uncomplicated, are not rare, and sometimes very disastrous in their result. But there is in simple cases no difficulty about it, and errors arise from hastiness, or from not suspecting the condition.

The treatment of the disease is in a most unsettled state, which is the natural result of its difficulty and of its rarity. The principal methods of replacement may be included in three divisions: first, that by long-continued gentle pressure; second, that by forcible taxis; and, third, that by operation. Extirpation is an evasion of the difficulty.

So many cases have been and continue to be recorded of success by long-continued gentle pressure, that strong expectations may be justly entertained of a regular treatment on this principle being duly formulated, at least as applicable to a large proportion of the cases that occur. No doubt, cases of spontaneous reposition are illustrations of this principle of treatment. It is my opinion that, in these spontaneous cases, the chief agent has been negative abdominal pressure, or great retentive power; and it will probably be found that the successful cases of artificial reposition on this principle are cases where there is already negative abdominal pressure, requiring only little assistance from the artificial pressure supplied by the practitioner. It is for the medical physicist to make out whether or not he can produce this favourable condition of the abdomen when it is not naturally present. Even now we can produce it by certain positions of the body—such as on the knees and face;[3] and it is yet to be made out what curative results may be expected from it in cases of inversion and the like, such as ordinary hernia. Artificial pressure is applied, or proposed to be applied, by the colpeurynter, and by various forms

[1] Contributions to the Mechanism of Natural and Morbid Parturition. By the Author, p. 285.

[2] See Barnes's Clinical History of the Medical and Surgical Diseases of Women, p. 734.

[3] Remarks in Obstetrics. By the Author, p. 430.

of pessaries. It appears to me quite certain that pressure, if duly and long enough applied, will replace the uterus; but any one who has seen cases will need no aid in recognizing the difficulty of applying pressure duly and long enough. The reposition of the persistently inverted fundus in Case IV. is probably an illustration of this principle of treatment, the fundus having become replaced by the pressure of the healing and contracting body of the organ.

Many cases have been reduced by forcible taxis. This method succeeded in Case III. Having regard to the frequent failures of this method under the most energetic and persevering attempts, and having tried in vain to imitate it experimentally in the amputated uterus in Case V., I am constrained meantime to believe that, when it succeeds, the uterine tissue is torn, much as it was cut in my cases treated by operation. My Case IV. strikingly illustrates and confirms this view, for the persistent inversion of the fundus, after the replacement of the body, was no doubt due to the circumstance that the incisions were not carried high enough, and that tearing beyond the incisions was not produced by the replacing efforts of the practitioner.

In conclusion, I have only a few remarks to make on this operation. It is evident, from what I have already said, that, not regarding the cervix as the source of difficulty, I do not expect direct advantage from cutting it. Incisions of it have been frequently proposed and performed, and it is my opinion that they may in some cases be useful, but only indirectly. They may permit easier access to the hand manipulating the really inverted part, the body of the organ; or they may facilitate the laceration of the body on the well-known principle that it is easier to continue a tear than to commence it. In my operations the body of the uterus was incised. In Case IV. the incisions were evidently enlarged by laceration while the organ was being replaced.[1] In Case V., which was of fourteen years' standing, the incised organ could not be induced to give way and tear. It is very probable that, in the successful cases, the peritoneum escapes laceration.

Dr. MOIR reported that he had seen, a long time ago, one case of acute inversion of the uterus with the placenta attached. The doubt was whether he should remove the placenta and then reinvert. He removed the placenta, and then reinverted the uterus. Of his other cases, one was seen with the late Dr. Dumbreck. It was a first delivery, and the woman had symptoms Dr. Dumbreck did not understand. He was called in two days after, and found the inverted uterus in the vagina, and away from the pubes. As he had no chloroform he went home for it, calling for Sir J. Simpson on his way. Simpson, however, was not at home. He with difficulty reinverted the uterus, adopting the plan of passing the fingers of one hand into the cup-shaped depression above the pubes, and with the other pushing up from below. It took two hours to do it, but he succeeded at last, and the woman did well. His next case was in St. Andrew's, where Dr. Archibald had delivered the woman some time before, but as some hemorrhage ensued, she kept her bed. When called in consultation he found the uterus inverted, and as it had a fibroid tumour, the inversion was chronic. He pulled the tumour out, and removed it, with little bleeding, by means of the écraseur. He then tried to reinvert the uterus, but failed, although tremendous force was used. He went back again with a special instrument, but again failed. The patient then came to Edinburgh, and was reported to the Obstetrical Society. He endeavoured to reinvert it, trying for days, and even weeks, with the caoutchouc bag, but utterly failed. The surface of the uterus could in this case be freely handled without causing any pain, only a little bleeding. Several operations were now proposed. Sir J. Simpson proposed to incise the body, but this was not done for fear of peritonitis. It was also proposed to incise the cervix. The patient ultimately left for Dundee, and remained there, still ill from the hemorrhage. She was alive yet, but with the uterus inverted. He had lately learned from her husband that she was now strong, and could walk about. Menstruation had ceased, and the uterus was atrophying. No operation, therefore, seems

[1] See some pertinent remarks by McClintock, Diseases of Women, p. 94.

needed. Another case happened at Stockton-on-Tees, and was interesting, as it caused a legal action on the part of the woman for the loss of her uterus. It occurred in the practice of Dr. Watson there, who delivered the woman, and, according to her friends, did not use care enough. After delivery, Dr. Watson found the uterus was inverted, retention of urine being one of the symptoms. He tried to reinvert it, and thought he had done so. The patient, however, was still uncomfortable, and therefore another surgeon was called in, He found the uterus still in the vagina, but failed to return it. He therefore got a third practitioner, who, in order to stop the hemorrhage, removed the uterus by the écraseur. The woman recovered, and then brought an action of damages for £1000 against Dr. Watson for the loss of her uterus. Dr. Watson accordingly asked him to give evidence. The trial lasted for two days, and he took up the apparatus used at the Maternity Hospital. In the witness-box he mentioned chronic cases where reinversion had been successful, and showed the caoutchouc bag in order to prove to the jury that the uterus ought not to have been excised. The result was that the poor girl lost her case and had to pay costs, Dr. Watson getting off free. Dr. Duncan's paper was a very important one, and with his views as to the causes of inversion he agreed. The cervix had little to do with it, but traction on the wall was important. He only wished now to mention an experiment he had performed. It was in a case of placenta prævia, where one of his students removed the placenta and tried to turn. As the woman was evidently dying, he extracted the child, and, with his one hand in the uterus, tried to invert it by pressure from above on the fundus. He utterly failed, although the uterus was not contracting. The common opinion, therefore, that inversion was caused by pulling on the cord, was wrong.

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A Contribution to the Diagnosis of Ovarian Disease.

A short essay lately published by Prof. Guido Baccelli, of Rome, deals with the percussion of the ilium as an aid to the diagnosis (1) of simple ovaritis, (2) of a commencing ovarian tumour, and (3) of the side of origin (right or left) of a large ovarian tumour whose early stages are unknown. Percussion of the diaphysis of the ilium, according to the author, gives rise to acute pain in simple ovaritis unaccompanied by diffuse peritoneal inflammation. An ovarian tumour gives rise to marked dulness on the side on which it is situated, while there is clear tympanic resonance on the side of the healthy ovary. Thus, if the left ovary be enlarged, there is dulness over the left ilium, and resonance over the right; and *vice versâ*. The rules to be adopted in percussing are as follows: The patient must lie on her side, with the legs drawn up, and the thigh which is uppermost adducted and pressed toward the abdomen, so as to place that part of the diaphysis of the ilium which lies below the centre of the insertion of the gluteus medius muscle in the position best adapted for percussion. The exact point of the external surface of the ilium to be percussed is a little below the centre of a straight line drawn from the posterior-superior border of the iliac crest to the upper edge of the acetabulum. Taking the average length of this line as ten centimetres, the point to be percussed lies between five and six centimetres below the posterior edge of the crista ilii. It is necessary to percuss forcibly, and it is better to use a pleximeter and a hammer than the fingers only. The two sides must of course be percussed at identical spots. The practical value of this method is illustrated in the essay before us by two or three striking cases, in which it was most successfully applied to clinch a doubtful diagnosis; and we are assured by Professor Baccelli that these are not the only ones in which it has stood him in good stead.—*Med. Times and Gaz.*, April 14, 1877.

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Anatomy and Physiology.

Origin and Distribution of Animal Heat.

At a late meeting of the Biological Society of Paris, M. CLAUDE BERNARD communicated the results of his recent experiments on the Origin and Distribution of Animal Heat. The method which he employs to determine the degrees of heat in different parts of the circulatory system is extremely simple. Two long thermo-electric sounds, introduced into the aorta and vena cava, are made to communicate with conductors placed in different parts of the arterial and venous systems. The following results are then observed:—

1. Arterial temperature remains unchanged in the aorta and large arteries, whilst that of venous blood varies considerably at different points of the venous system.

2. At the surface of the body, near the four large joints, and at the lower part of the neck, venous blood is colder than arterial, while in the heart it is warmer.

3. This apparent contradiction is explained on observing the changes of temperature which take place while the blood ascends to the inferior cava. Venous blood, though colder than arterial on entering the pelvis, becomes gradually warmer as it ascends. About the level of the renal veins there is little or no difference of temperature between the two systems; but at the level of the hepatic veins the difference is perceptibly in favor of venous blood, which is here warmer than arterial by several tenths of a degree. This predominance continues even in the heart, although the blood of the superior cava, when it reaches the heart, is colder than that of the inferior cava.

4. Hence the conclusion that venous blood, which is colder on the surface of the body than arterial, becomes gradually warmer, and on arriving at the heart actually exceeds in temperature the heat of arterial blood.

5. This elevation in temperature in venous blood takes place constantly, and does not depend on any chemical action taking place at the points indicated above. It simply depends on the arrival of venous blood from the kidneys, liver, and intestines, which are protected by their situation from the influence of external cold.

6. Hence we are unable to conclude that animal heat is produced in the abdominal viscera. The latter are merely protected from loss of temperature because they are withdrawn from the influence of the surrounding atmosphere. When evaporation is prevented by warm clothing, etc., the venous blood arrives at the heart warmer than the arterial, even when all the organs have been kept in a state of rest.

7. The calorific topography of the blood is not uncertain, but is regulated by determinable conditions, and maintained by the influence of the thermic and vaso-motor nervous system; but we cannot infer from this the existence of special calorific foci. Animal heat is produced in the capillaries of the body. In a word, animal heat cannot be localized any more than nutrition, of which latter it is a direct effect.

8. *General Origin of Animal Heat.*—M. Bernard concludes from his experiments that animal heat is generated in all the tissues, in the muscles, nerves,

nervous centres, glands, etc. Many physiologists have observed that muscular contractions are attended by increase of heat; but M. Bernard points out that such elevation is always preceded by a well-marked diminution of heat in the contracting parts. He has noticed the same fact with respect to the glands whenever the secretory nerve is excited. Thus, if we excite the chorda tympani, in order to stimulate the submaxillary gland, and at the same time insert a thermo-electric needle into the gland-tissue, we find that secretion is always preceded by lowering of temperature in the gland, quickly followed by elevation.

9. *Thermic and Vaso-motor Nerves.*—M. Bernard also drew attention to the different actions of these nerves. When the vaso-motor nerves alone are excited, capillary circulation may be increased, but we always find diminution of the general temperature. In thermic action, on the contrary, the vaso-motor effect is always consecutive, and is attended by increase of the general temperature. M. Bernard proposes to pursue this latter part of the subject more completely, as it seems to him one of great interest in connection with physiology and pathology.—*Med. Examiner*, May 31, 1877.

Materia Medica and Therapeutics.

The Open Treatment of Wounds.

Dr. Ed. Schwartz (*Revue Mensuelle de Médecine et de Chirurgie*, March, 1877) discusses the advantages of the old and simple open treatment of wounds, as opposed to the methods followed by Guérin and Lister. Vincenz Von Kern first systematically followed this plan, which, in his hands, especially consisted in freely exposing the wounded surfaces to the air, and simply keeping the edges of the wound in position by means of sponges.

As now practised, the method, *e.g.*, in amputations, consists not only in exposing the wounded surfaces freely to the air, without the use of charpie or compresses, but also in carefully keeping the stump as much as possible in one position by laying it on a cushion covered with mackintosh, and so placing it that the discharges can easily escape and find their way into a vessel fixed at the side of the cushion. Sutures are sometimes used with the view of obtaining primary union; but generally the healing process is slow, and takes place by the formation of granulation tissue, and this is, in most instances, accompanied by traumatic fever. There may be, however, cases with local inflammation, without any apparent general disturbance.

Wounds thus freely exposed to the air, when kept for some time in one position, and so placed that the discharges easily escape, are said to succeed as well as wounds treated by the other methods; and this opinion is supported by some statistics mentioned at the end of the paper.—*London Med. Record*, May 15, 1877.

On the Mydriatic and other Topical Effects of the Application of Gelsemina to the Human Eye.

Mr. John Tweedy, Clinical Assistant at the Royal London Ophthalmic Hospital, Moorfields, in an article published in the *Lancet* (June 9, 1877) gives the results of a series of investigations undertaken to complement those of Dr. Ringer and Mr. Murrell, on the topical action of the alkaloid of gelseminum sempervirens upon the human eye. These gentlemen had already observed the curious fact that while the internal administration of the tincture of gelseminum in doses sufficiently large to produce toxic effects caused contraction of

the pupil,[1] the local application of a solution of the hydrochlorate of gelsemina to the conjunctiva was invariably followed by dilatation of the pupil.[2] In one instance which I saw with Dr. Ringer, the pupils were contracted to a pin's point, and there was a strong double convergent squint from the internal administration of large and frequent doses of gelseminum, and in several other cases the contraction was well marked.

As the most striking results of the topical application of gelsemina to the eye have already been recorded by Dr. Ringer and Mr. Murrell,[3] I propose to relate some of the more subtle and complicated changes which take place, not only within the eye, but also in the extra-ocular muscles.

It is worthy of remark that whereas the commonly recognized dilators of the pupil are obtained from some member of the natural order Solanaceæ, a powerful mydriatic has now been discovered in gelseminum, which is botanically allied to Strychnos Nux Vomica, and is, indeed, said by many authorities to belong to the same natural order—namely, Loganiaceæ.

My earlier experiments were made with a solution of the hydrochlorate of gelsemina, twenty-four grains to the ounce, prepared by Mr. Gerrard, teacher of pharmacy at University College Hospital, while in a few later ones a solution of only four grains to the ounce, prepared by Mr. Martindale, of New Cavendish street, was used. The following statements refer indiscriminately to the action of either solution, except in instances where the particular preparation is specified. I shall describe in order the changes (*a*) in size of the pupil, (*b*) in the state of the accommodation, and (*c*) in the relative strengths of the extra-ocular muscles.

Pupil.—About ten to fifteen minutes after the application of a drop of gelsemina to the conjunctiva a faint crescent of ciliary injection appears in the sclerotic immediately adjoining the lower and inner margin of the cornea. By degrees the redness becomes deeper in colour, and spreads upwards as well as outwards, until in about twenty minutes more it entirely encircles the cornea. There is, at the same time, considerable engorgement of some of the large straight vessels which course along the sclerotic from back to front, but there is no congestion of the conjunctival vessels, or very little. Simultaneously with the appearance of the ciliary crescent the pupil undergoes slight but appreciable contraction, but almost before the ciliary halo is entire the pupil begins to dilate. Henceforth, the subsidence of the redness and the dilatation of the pupil go on with equal pace, so that by the time that mydriasis is complete almost every trace of ciliary injection has entirely disappeared. From fifty to seventy minutes usually elapse before the pupil is enlarged to its utmost degree, but when it has attained its maximum dilatation it remains fixed and immobile for many hours.

Accommodation.—No sooner does the pupil begin to dilate than evidences of commencing impairment of the power of accommodation for near objects appear, and by the time that full dilatation is reached the normal range of accommodation is shortened by two or three inches, in consequence of the recession of the nearest point of distinct vision. But by attentively "fixing" the near object for thirty seconds or so, and with a great effort, the near point may still be momentarily approximated about one inch. The further effects on the accommodation depend upon the strength of the solution and upon the number of times that it is employed. If either of the solutions be used once, the power of accommodation for near objects gradually diminishes, and attains its greatest degree in the course of three or four hours; but one application rarely suffices to overcome entirely the accommodation, unless this be naturally weak or impaired by age or debility. Three hours after the instillation of a drop of the stronger solution, the nearest point of distinct vision, originally at, say, three and a half to four inches, is removed to about twelve or fourteen inches; but after the weaker solution it is not further than seven or

[1] The Lancet, 1876, vol. ii. p. 78.
[2] Ibid., 1876, vol. i. p. 734; also vol. ii. p. 78.
[3] Ibid., 1876, vol. i. p. 732; vol. ii. p. 78.

eight inches. The power of accommodation for near objects can, however, be overcome in the course of three or four hours by repeated applications of the stronger solution at intervals of fifteen minutes to half an hour. The weaker solution must be used more frequently and for a longer time to produce the same effect. If the power of accommodation be great, the weaker solution will not overcome it, and in cases of so-called spasm of accommodation, or in any instance where the power of accommodation is very great and obstinate, gelsemina cannot be relied upon, although the pupil always dilates freely.

Ocular muscles.—If the relative strengths of the internal and external recti muscles be carefully estimated by means of prisms before the employment of gelsemina, it will be found that after the eye is fully under the influence of the alkaloid the internal rectus will overcome a stronger prism and the external rectus a weaker prism than before. This experience was uniform in all the cases in which the strengths of the muscles before and after the application of the gelsemina were tested, although it was not so pronounced when the weaker solution was used. The power gained by the internal rectus seemed to be relatively rather more than that lost by the external. For example, in one carefully observed instance the internal rectus before the instillation of gelsemina could overcome a prism of 18° only with great effort, while the external rectus easily overcame a prism of 6°. Six hours afterwards, when the eye was completely under the influence of gelsemina, the internal rectus could easily overcome a prism of 22°, and the external rectus only one of 3°. In some other cases the difference was very much greater.

There can, I think, be no doubt that gelsemina, locally applied, affects the terminations of the sixth nerve, so that the strength of the external rectus is impaired; but I have been unable to determine whether the internal rectus becomes really stronger or gains power only relatively by the weakness of the antagonistic external rectus. In the experiments performed by Dr. Ringer and Mr. Murrell[1] upon rabbits and cats, in poisoning by gelsemina, whether internally administered or locally applied, the eyeballs became prominent from paralysis of the ocular muscles. This was very marked in the rabbit. Subsequent experiments upon man showed that one of the first symptoms of the toxic effect of the internal administration of gelseminum was weakness, but not actual paralysis, of the external rectus muscle. It would appear, therefore, that gelseminum has a special affinity for the sixth nerve; although, when given in large doses, it profoundly affects also the third nerve. I could not detect any prominence of the globe from the local application of gelsemina in man, nor was the action upon the extra-ocular muscles in any instance great enough to give rise to diplopia.

One of the chief merits of gelsemina as a mydriatic has yet to be described, at least as far as the ophthalmic surgeon is concerned—and it is from this standpoint I have mostly watched the experiments. The importance which is now very properly attached to correction of anomalies of refraction, and especially abnormal regular astigmatism, necessitates the frequent and almost constant use of atropine to overcome the power of the accommodation for near objects. But against atropine there has always been the serious objection that its effects last so long that great inconvenience arises to the patient from being unable to do near work for several days after the error of refraction has been estimated. If the pharmacopœial solution of sulphate of atropine has been employed, at least eight to twelve days must elapse before the accommodation returns to its normal state. With gelsemina, on the other hand, sufficient accommodation returns within ten to fifteen hours to enable a person to read newspaper type at twelve inches, and within thirty hours the accommodation will have practically returned, although the pupil may remain somewhat dilated, though not quite immobile, for several days. I can also state, from personal experience, that the mistiness and confusion of vision when the eye is fully under the influence of gelsemina is nothing like so great as when atropine has been used.

Practically, it may be stated that gelsemina locally applied readily dilates

[1] The Lancet, 1876, vol. i. p. 732.

the pupil, and, when used of sufficient strength, temporarily overcomes the accommodation. It is preferable to atropine in cases where the power of accommodation is not great, where it is necessary to overcome the accommodation for a short time only for the purpose of estimating the degree of ametropia, because its effects are more transient, and the confusion of vision during its action is less. To insure paralysis of accommodation within three hours a solution of at least eight grains to the ounce must be used every fifteen minutes for the first hour, and every half hour afterwards.

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Metallotherapy.

An interesting report has just been presented to the Société de Biologie of Paris. In August, 1876, M. Burq obtained the appointment of a committee, consisting of MM. Charcot, Luys, and Dumontpallier (reporter), to investigate the effects of the application of various metals to the skin.

M. Burq has maintained for a long time (since 1849) that, in certain affections of general and special sensation, a return of sensibility may be brought about by the cutaneous application of certain metals. The same metal does not equally affect all patients; in fact, there exists an idiosyncrasy towards this or that metal. The particular metal is easily ascertained by applying in succession for several minutes a plate or plates of gold, zinc, copper, or iron, to the affected parts. M. Burq has also maintained, in the face of much incredulity, that the affections of sensibility stand in direct relation to some general morbid condition, and that from the external application an indication is obtained for the internal administration of the same metal. This is the basis of his system of *métallothérapie*.

The commission have not occupied themselves with M. Burq's metallotherapeutic speculations, but have confined their attention to the facts as regards the external application of the metals. The experiments of the committee were begun in November of last year in the Salpêtrière, and have frequently been the cause of much astonishment to visitors to the *clinique* of M. Charcot. The patients experimented on have been chiefly those affected with hysterical hemianæsthesia or hystero-epilepsy. In these cases, both superficial and deep common sensation are abolished unilaterally to such an extent, that not the slightest reaction is exhibited, even when long needles are thrust through and through parts usually the most sensitive. In fact, as M. Dumontpallier in his report says, the procedure by which the fact of anæsthesia was demonstrated "would have been barbarous, had it not been practised on parts devoid of sensibility." Taste and smell are likewise abolished on the same side. Colocynth may be placed on the side of the tongue, and the most disagreeable odours held to the nostril, without exciting the slightest appearance of sensation or reaction. As regards sight and hearing, the loss on the anæsthetic side is not usually complete, but considerable, there being no signs of organic disease in the retina or ear. The temperature is also found to be lower on the anæsthetic side; and the muscular power, as tested by the dynamometer, considerably impaired. The committee have found, in accordance with M. Burq's statements, that there exists in different patients a special *aptitude métallique;* that is to say, that sensibility returns under the influence of a certain metal. This is determined by bending on the arm or leg, or anæsthetic part, plates of gold, copper, zinc, etc. After from ten to fifteen minutes, it is found that if the metal employed be the proper one, sensation begins to return at the point of application. The patient feels a sensation of heat or numbness; the part becomes red; and pricking with a needle causes great pain at the level of the bracelet and for some distance above and below it. At a given distance, well-marked dysæsthesia, or perverted sensibility, becomes established.

When the metal is applied to the forearm, the sensibility gradually extends to the hand, and the temperature rises above that of the other side, as determined by a thermometer fixed in each hand. At the same time the muscular power rises very considerably above that which existed before the commencement of the experiment. Curiously, also, needle-punctures now bleed freely;

whereas in the anæsthetic condition scarcely a drop of blood showed itself even when the needle was thrust through the limb. What is true of common sensibility is also true of the special senses. By the application of the metal at or near the organs of special sense, a more or less complete restoration is effected.

The effect, however, is very transitory, and next day the anæsthesia is found to have returned. The patients generally complain of great fatigue, headache, and a tendency to sleep after each experiment. But perhaps the most remarkable phenomenon of all is that the return of sensibility, under the influence of the metallic plates, is effected at the expense of the sensibility of the sound side. To this phenomenon the committee give the name *transfert de la sensibilité*. This takes place in a symmetrical manner. Thus, if the sensibility be restored to the arm by the application of the metal, it is found that the corresponding part of the sound arm has lost its normal sensibility. The same is true of the organs of special sense, and of temperature and muscular power. It would seem, therefore, that there is no real gain, but that a *plus* on the one side is accompanied by a *minus* on the other.

The committee have not yet ascertained the effect of the simultaneous application of the metals on both sides of the body. But experiments have been made on two cases of hemianæsthesia of cerebral origin. One of these had been affected for many years with hemianæsthesia and hemichorea on the right side, consequent on an attack of hemiplegia from organic cerebral mischief. This patient was subjected to experimentation with different metals—zinc, copper, gold, and iron. The result was negative as regards zinc, copper, and gold; but iron, applied to the thigh, arm, and forehead, caused return of sensibility after twenty minutes' application. Sensibility gradually extended over the whole of the right side, and the hemichorea was sensibly diminished. Plates of iron applied over the nose and tongue also restored sensation there. Similar results ensued in another case on the application of gold. It is further remarkable that in these two cases the recovery has been permanent and not transitory, as in the hysterical cases. M. Burq's statements having thus been fully confirmed, the committee next endeavoured to ascertain the *modus operandi* of the metallic plates. It having been suggested by several members of the society that the results were due to electrical action set up by contact of the metals with the skin, M. Regnard was entrusted with the experimental testing of the hypothesis. From Regnard's experiments with Du Bois Reymond's galvanometer, the fact was demonstrated that the contact of the metals with the skin did actually excite electrical currents, which varied with the metal employed. Thus, the plates of gold caused a deflection of the needle of from two to twelve degrees, while similar plates of copper caused a deflection of from forty to forty-five degrees. This being established, it was rational to suppose that currents of like intensity furnished by a galvanic pile would produce effects analogous to those caused by the application of the metals. This also was experimentally verified, it being found that in those patients sensible to gold, a current of from two to twelve degrees caused a restoration of sensibility, and in those sensible to copper a current of from forty to forty-five degrees was necessary. A further interesting fact was made out in the course of these experiments, viz., that on varying the intensity of the currents, active and neutral points were found to exist in the galvanometric scale. Thus, a patient sensitive to a current of 10 to 15 deg. ceased to be sensitive to a current of 45 to 60 deg., but again became sensitive to a current of 80 to 90 deg. The points of non-activity are termed by M. Regnard the *neutral points* of the scale.

What the explanation of these curious facts may be, is left undetermined by the committee.

The results of this investigation are so novel and so unexpected, that they cannot fail to stimulate further speculation and research. The committee compliment M. Burq on the favourable results of their labours, and recommend his memoir for competition for the Prix Ernest Godard.—*British Med. Journal*, May 19, 1877.

Medicine.

On the Clinical Condition of the Heart and Vessels in Chlorosis.

Dr. PEARSON IRVINE, at a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, June 9, 1877), read an elaborate paper on this subject, of which the following is a brief abstract. The author remarked that certain cardiac physical signs have been long associated with chlorosis and allied conditions, and, above all, a "hæmic" murmur at the base, by some said to be generated in the aorta, by others in the pulmonary artery. It is rare to find in text-books mention of any other of the cardiac signs met with in the above diseases. The most important change in the circulatory system is dilatation of the ventricles of the heart, especially, perhaps, of the left. This is hardly noticed by writers in this country. In Germany, Stark (*Archiv der Heilkunde*, 1863) insisted on its occurrence in severe cases, but it is common to find it in those of moderate degree. Besides physical signs subjective symptoms favoured this opinion, such as frequent palpitation, dyspnœa, cough, and the state of the pulse, as do also the results of treatment in its direction. The physical signs are often almost conclusive. The apex-beat in chlorotics is carried too far outwards, is too diffuse, and, in this respect, corresponds with the general cardiac impulse, which is usually "slapping," and, like that met with in organic disease, followed by dilatation. Sometimes the impulse is distinctly heaving, and hypertrophy undoubtedly occasionally occurs. Virchow and others have maintained that this is the usual condition in chlorosis, and have ascribed it to narrowing of vessels. Perhaps, however, when it occurs, it is simply secondary in most cases to anæmic dilatation. The cardiac murmurs heard in chlorosis are various, and exclusiveness should not be claimed for one or the other. They may be heard in one or several of the following positions, all being systolic in rhythm, yet separable from one another when two or more coexist: (1) over the aorta; (2) over the pulmonary artery; (3) over the left auricle and its appendix; (4) at the left apex; (5) over the fourth left costal cartilage, limited there or transmitted downwards to the right or left; (6) in the fifth left space, below it, or over the sternum adjacent to the parts. Thus murmurs may be heard "all over" the cardiac area, and yet it may be possible to localize them. The effects of pressure in intensifying murmurs in the area of the pulmonary artery are almost conclusive of their generation within it. Frequency of aortic murmurs is more doubtful, but their occurrence has been asserted by many eminent physicians. At the apex a bruit will often be found if looked for, and in this case the question arises whether or not it is due to mitral regurgitation. It can be explained on better grounds than supposition of the latter. Over the auricle appendix a murmur is certainly sometimes heard, as Naunyn says, who believes it to be due to the eddying of thin regurgitated blood in the auricular appendix. Dr. Balfour supports this theory, and by its supporters almost complete exclusiveness is claimed. Perhaps this murmur has been confounded with bruits generated in arteries about the clavicle, and with those whose greatest intensity is over the fourth cartilage. Dr. Balfour asserts that this auricular murmur is heard in all cases where the venous hum in the neck is decided. This is certainly not the case; the murmur audible over the fourth cartilage or below it, or in parts adjacent, is of great importance; it is as common as any abnormal sound heard in chlorotics. Quite ten years ago Parrot, of Paris, described a murmur in area mentioned, as met with in acute anæmia from hemorrhage, and associated with evidences of tricuspid regurgitation in the veins of the neck. He has since argued that all the murmurs heard in chlorosis are due to tricuspid regurgitation. But this exclusive view is altogether arbitrary. The fourth cartilage murmur is sometimes transmitted downwards, to the apex, or towards the ensiform cartilage. A consideration of hæmic murmurs is likely to aid in explaining many so-called organic ones. In chlorosis the murmurs heard at the fourth cartilage and below it are, perhaps, due to dilatation of the ventricles, to their consequent imperfect emptying, and the eddying of thin residual blood in

them. Sir Dominic Corrigan long ago gave this explanation of some apex murmurs in mitral disease, and it has been renewed by later writers. In chlorotics a murmur thus generated is possibly sometimes best heard at the apex, but oftener over the fourth cartilage or adjacent, because the stethoscope is then immediately applied over the source of the murmur. There are many other explanations, plausible enough, of these murmurs, such as irregular vibration of valves, irregular action of the musculi papillares, and in rare cases actual incompetency of the mitral or tricuspid orifice secondary to ventricular dilatation. The pulse in chlorosis is not always rapid, as is everywhere advanced; it is very often, indeed, slow and suggestive of a state of hibernation, though easily excited into rapidity. It is often irregular from moment to moment, both as regards fulness and frequency, and thus such as one would expect in anæmic dilatation of the ventricles. The excitement of examination makes the pulse irregular in this way, but sometimes produces no change whatever in it. Venous murmurs are certainly best heard in the right neck, and in most cases are audible on this side only. The effects of respiration on the bruit du diable are much disputed, but the statement of Hope, that respiration causes the "humming" to become "rushing," is probably correct. Inspiration favours the return of blood from the veins, and thus brings this about. Curious changes in the venous hum may be made by modifying respiration. Clinical observation of the heart in chlorosis and allied anæmic conditions is of therapeutical importance. To meet the cardiac states mentioned, belladonna seems most suitable, its use being indicated by its known physiological effects, by its action in cases of fever, as asserted by Graves, and by the condition of the heart. It makes the pulse regular in force and rhythm, and increases the number of beats. Of course iron is the essential remedy, but many cases improved much more rapidly generally, while various troublesome symptoms at once disappeared, when belladonna was added to the prescription, doses from about eight to ten minims being employed.

Dr. BARNES referred to the necessity for more accurate and extensive observation on the subjects referred to by Dr. Irvine, and especially as to whether the symptoms of chlorosis are due to changes in the blood or the tissues, especially in the heart itself. He differed from the author in his views, and thought that the observations on which those views were grounded were insufficient to support them. It seemed to him more probable that the dilatation of the heart was due to the altered condition of the blood, as seems to be the case in pregnancy, where there is also altered blood condition and hypertrophy of the heart. Probably the deterioration in the quality of the blood stimulated the heart to excessive exertion to make up for the deficiency. Perhaps also some part of the increased area of cardiac dulness might be due to the want of tonicity of its muscular fibre; the weak, watery, and flabby condition giving the appearance of real dilatation. Moreover, the perfect recovery in many cases showed that there was not likely to be any real organic disease of the heart. The changes which occurred in chlorosis might be likened to those occurring in the blood in pregnancy, which sometimes give rise to simulated organic disease, such as the albuminuria of pregnancy, which (although even casts might be found in the urine in primiparæ) was probably not really organic.

Dr. BARCLAY observed that all murmurs were in reality hæmic—*i. e.*, produced from altered relation between the blood and the cavities and orifices of the heart. Such murmurs as occur in chlorosis were, he thought, probably due to changes in the blood, owing to which it vibrated more readily. In such cases the murmurs might be equally audible all over the heart, but were usually best heard at the apex, owing to that being the most superficial part in many cases. The murmurs heard in the neck were arterial or venous according to the way in which the stethoscope was held.

Dr. IRVINE, in reply, said that he agreed with Dr. Barnes that the first changes were probably in the blood, and those in the heart secondary, as shown by the entire disappearance of the symptoms under treatment. He admitted, with Dr. Barclay, that all murmurs were "hæmic" in the sense of being produced by altered relations of the blood and heart. As to the murmurs in the neck, it had been pointed out that arterial murmurs were increased by pressure over the vessels by the stethoscope, venous murmurs diminished.

Dr. West observed that so far as his observation went, the murmurs heard in children were far more commonly organic than not, and that hæmic murmurs were in them of much less frequent occurrence.

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Hemi-Anœsthesia in the Clinique of Professor Charcot.

Dr. J. Russell Reynolds, Prof. of Medicine in University College, London, gives (*Lancet*, May 12, and June 2, 1877) the following account of some interesting cases observed during a visit to Professor Charcot's wards at La Salpétrière, which cannot fail to prove extremely interesting to all who are engaged in the study of nervous diseases.

There were three examples of well-developed hemianæsthesia; one of convalescence; and one of almost completed cure. The three cases first mentioned presented symptoms almost identical, and to these Dr. Reynolds first directs attention, describing that which he saw and heard in the following order:—

1. *Anœsthesia.* The skin, from the top of the head to the sole of the foot, on one side, was deprived of all sensibility. It might be pinched, pricked, burnt, or faradized, without eliciting from the patients the slight indication of uneasiness by either word, look, or gesture. The line of insensibility corresponded closely, but not absolutely, with the median line on the forehead, nose, upper and lower lips, chin, throat, thorax, and abdomen. The upper and lower limbs were absolutely anæsthetic. A blunt pin thrust through the skin and brought out again at another point, either behind the ear, in the throat, in the arm, forearm, hand, or between the fingers, was regarded by the patients with a look of amusement, and was stated by them to be unfelt. The mucous membrane of the lip and of the side of the tongue was also insensible Taste, smell, sight, and hearing were defective on the same side, but in varying degrees. There was analgesia as well as anæsthesia.

2. *Temperature, colour, and nutrition.* There was no difference that I could observe, in either one of these conditions, between the healthy and the anæsthetic side. M. Charcot has observed, however, as others have done, diminished temperature and distinct pallor on the surface of the affected parts.

3. *Circulation.* There was no difference to be detected between the pulses on either side; but, with one exception only, the punctures that were made were absolutely bloodless; and yet no one of the patients was obviously anæmic. By "one exception" I mean a single exception in one case—viz., a puncture just above the wrist, from which a few drops of blood exuded.

4. *Motion.* The muscular power was not defective in the anæsthetic limbs; but, on the contrary, as tested by the grasping of my hand, and by the dynamometer, was slightly in excess on the right (the anæsthetic) side. There was no want of co-ordination of movement; the patients could work with the needle or the crotchet quite perfectly, and could execute any coarser combinations that were required. There was no deficiency of knowledge as to the position of the limbs; but M. Charcot informed me that he had met with this deficiency in other cases. With the exception of the periods of attack, I could observe no clonic or tonic spasm; nor any undue flaccidity.

5. *Ovarian region.* In each of the three cases that I saw the patients complained of spontaneous pain, and also of tenderness in this locality; but, judging from the aspect, tones, and gestures of the patients, the pain did not appear to me to be severe, nor the tenderness extreme. The pain and tenderness were on the same side as the anæsthesia of skin. The position of pain and tenderness was somewhat higher than that which is generally regarded as due to change in the condition of the ovary. It was as high as the horizontal level of a line drawn between the upper projecting processes of the iliac bone, and corresponded, very nearly, with a vertical line cutting this from the mammilla.

6. *Attacks of "hystero-epilepsy"* (Charcot). I had the opportunity of observing a great number of these seizures in one patient, a girl aged eighteen, who had suffered from them from the age of thirteen, one year before the com-

mencement of menstruation. The attacks usually occurred at or about the time of the catamenia, but were not confined to that period. They occurred sometimes one or two hundred times in the day. It will be convenient to describe, separately, the aura, the attack, and the effects of compression of the ovarian region.

(*A*) *The aura.* Three patients described to me, in almost identical terms, the sensations that preceded the attacks. They were spontaneous, or might be induced by pressure. First, pain in the region of the ovary; next, its ascent to the epigastric region, sometimes with, sometimes without palpitation of the heart; then, a choking feeling in the throat, "globus hystericus;" this followed by a noise in the ear, whistling or hissing in character; after it, a beating in the temporal region; and then, loss of consciousness, followed by the convulsions which I witnessed.

There was something in the close resemblance of the descriptions given by these three patients, and in the extreme rapidity with which they were uttered, that made me think that they must have been frequently repeated beforehand; but now I will confine myself to facts, reserving comments for a later portion of this paper.

(*B*) *The attack.* 1. The first objective fact was jerking movement of the lower abdominal region, with some irregularity of respiration; the movement was produced by the rectus abdominis and the diaphragm, together with the other muscles of the abdominal walls. During this period, which lasted from five to ten seconds, the patient was talking merrily, but sometimes pressed the right ovarian region with her hand, and exhibited an expression of pain.

2. The second phenomenon was, in many respects, similar to an epileptic seizure. The right hand was turned outwards and backwards, being extended forcibly, the fingers were separated from one another, and held in quivering tonic spasm. The forearm was semi-rotated, by similar spasm, outwards; the upper arm was slowly contorted and removed from the side of the body. There was distortion of the features, rotation of the head towards the left side, and a general quivering rigidity of the whole body, but it was more marked on the right—the anæsthetic—side. The neck was rigid and swollen; the respiration was stopped for a few seconds; the lips were closed; the chest-walls fixed, and the face became reddened, but not dusky in tint. The eyeballs converged slightly, the right being rather more inwards than the left. The pupils were rather smaller than in the intervals of attack.

3. The third stage was one of general clonic spasm, during which the face became more deeply reddened; the conjunctivæ injected; gurgling noises were produced in the throat; frothy saliva issued from the mouth, but it was never coloured; nor was the tongue ever bitten. The breathing was irregular and forced, and the limbs were thrown hither and thither in a disorderly manner, but not with the degree of force that is often observed in even moderate attacks of epilepsia gravior. This stage lasted from five to fifteen or twenty seconds, and then the patient gave a sigh, breathed deeply, and a fourth stage presented itself.

4. This fourth stage resembled the sleepy condition that follows the ordinary, but mild, epileptic seizure. The face was tranquil, the limbs relaxed, the skin moist, the respiration deep but regular, the eyelids closed, and there was no sign of consciousness. This stage lasted from twenty to thirty seconds, when another phase presented itself.

5. In this, which may be called a fifth period, the patient became delirious, talking, screaming, gesticulating, and throwing herself about on the bed, generally as if in great terror, but sometimes in a pleading and remonstrative tone, and once in a somewhat voluptuous attitude. This wild delirium lasted for a few seconds, and then a sixth stage was entered.

6. The final period was one of as violent hysterical convulsions as I have ever seen. There was not only vehement laughing and crying, but the most extravagant contortion of the head, neck, body, and limbs. The head was thrown backwards and forwards, with a force that seemed to threaten breaking of the neck. The body was jerked from off the bed; the patient sometimes was in a state of extreme opisthotonos, resting on the nates, and—so far was

the head thrown backwards—on the frontal aspect of the vertex, the trunk being raised high enough in the air for one of the nurses to have crept underneath it. This convulsion was of variable duration, but, when not arrested by pressure, terminated in a sighing mode of breathing, with the aspect of great exhaustion, some perspiration, and general flaccidity of limbs. Then the mind was as perfectly quick in appreciation, and the power of expression was as good, as in the periods of entire freedom from attack. Indeed, contrasting the mental state of this patient on the day of her attacks and immediately after their recurrence, and in the intervals between them, with that which I observed on the preceding day, when she had been free from seizures, I should say that she was distinctly sharper in appreciation, and more ready in repartee. There was a peculiar brightness in manner and conversation which did not exist on the day of freedom from attack. There was no elevation of temperature.

(*C*) Pressure upon the ovarian region instantly and invariably arrested these attacks. The pressure was made with the hand, was forcible, was over the painful ovary, and on the anæsthetic side. It did not seem to matter at what stage of the attack the pressure was exerted—the morbid phenomena were at once at an end. M. Charcot stopped them and I stopped them in the stage of aura, in the epileptoid condition, during the delirium, and in the condition of hysterical opisthotonos. The immediate effect was opening of the mouth and protrusion of the tongue, and in another second, or fraction of a second, cessation of all spasm and return to complete consciousness, with the somewhat sharpened quickness of perception and expression that I have already mentioned. The patient talked or chattered with doctor or attendants in a voluble style, and without the least apparent difficulty, distress, or pain.

7. *Contraction of muscles.* This tonic condition of rigidity of muscles exists often in the anæsthetic limb in cases of the kind that I have mentioned. It usually commences abruptly, and sometimes, even after long duration, disappears as suddenly. It resembles in its locality and preference for the flexor muscles the "late rigidity" of Dr. Todd, but it differs in the mode of its onset and in its clinical relationships. It is so familiar to all who have seen much of hysteria, and so often exists without hemianæsthesia, that I need not dwell upon it longer.

8. *Removal of hemianæsthesia by application of metallic bands to the head, trunk, and limbs.* Whatever may be the explanation of this process, there can be no doubt as to the fact. A chain of Napoleons in one case, a plate of gilded metal in another, a bracelet of copper in a third, applied to the arm, speedily removes the anæsthesia, which is transferred to the opposite side; but the continuous application of these metals succeeds ultimately in removing all the symptoms.

I saw one case in which such proceedings had been adopted, and in which the sensibility was almost normal; and I saw another, the celebrated case of Anuria, with hemianæsthesia, convulsions, and contractions (related in M. Charcot's lectures), but which was now quite cured.

The points upon which I wish to make some comments are the following:—

1. The relation of anæsthesia and analgesia to changes in temperature, colour, nutrition, and circulation.

2. The retention of muscular power, and the faculty for co-ordination of movement, when tactile sensibility was entirely removed.

3. The relation of the attacks to ovarian conditions, both as to their onset and to the effects of compression.

4. The attacks, their difference from true epilepsy, their peculiarities in respect of aura, of convulsive movements, of succeeding mental condition, and of temperature.

5. The contraction of muscles; "contracture."

6. The *modus operandi* of the cure; the application of metallic bands.

1. *The relation of anæsthesia and analgesia to changes in temperature, colour, nutrition, and circulation.* Sometimes we meet with examples of any one of these altered states apart from that of any other, sometimes we find simultaneously changes in each and all of them, but most frequently we meet with two or three in combination.

I have seen complete anæsthesia and analgesia in one limb with greatly reduced temperature, but without any alteration in colour, nutrition, or pulse. The one leg felt cold as marble on a cold day, the other warm as the rest of the body. The condition lasted for many months. There was no sense of tact, pinching, pricking, faradization, or bending of the toes; but the muscles were firm, and the skin unaltered in appearance.

There was diminution of power, and of co-ordination of movement, and there was uterine disturbance; but the limb was not paralyzed, and the symptoms persisted long after the removal of the uterine trouble. They were, however, speedily, entirely, and, till now, permanently removed by three applications of faradization.

In this case I believe that the symptoms I have mentioned depended upon change in the *highest portions of the cerebral centres*, in those which are the nearest in their association with the mental and moral perception of physical conditions.

Again, I have seen, in many cases, altered and impaired sensation, with changes in the local circulation, such as irregularity, intermission, and feebleness of pulse, in the limbs of the affected side; and, in one case which I have recorded, the peripheral circulation could be entirely arrested by pressure upon one of the upper dorsal vertebræ.

Here, I think, the vaso-motor system is at fault, sometimes as the result of local injury, but much more frequently as the outcome of an altered blood-state, and, in the majority of instances, as the expression of that condition which may be briefly designated as "gouty." The immediate cause of the symptoms seems, in these instances, to have been *spasmodic* contraction of the vessels.

In other cases I have found the extremities of the fingers and toes blue, cold, and hyperæsthetic, these conditions being persistent for months, but removable by the application of a "constant current." In one marked example there had been erysipelas in a limb paralyzed from obvious cerebral disease, while in another there was no paralysis, but the patient was subject to "anginal" attacks.

Such localized changes in colour, temperature, and sensation appear to me to be due to limited alterations, of *paralytic* sort, in the vaso-motor system.

The association of anæsthesia with nutrition change and paralysis in cases of *spinal injury or disease* is so familiar that I will only say with regard to it that I have found alkaline urine, without any retention, and sloughing of the skin, in parts not pressed upon, as well as in those subjected to pressure, within thirty-six hours from the onset of paraplegia, the result of spinal hemorrhage.

The cases which I saw with Professor Charcot differ from all those groups of maladies to which I have alluded. The hemianæsthesia and hemianalgesia were complete, extended to the organs of special sense, and were unaccompanied by changes in colour, nutrition, motion, or temperature in the limbs; and are, in my opinion, due to a morbid state, analogous to that which existed in the first case of anæsthesia that I mentioned—namely, one affecting the *brain* in those portions which stand in the closest relationship with *mind*.

2. *The retention of muscular power, and the faculty for the co-ordination of movement when tactile sensibility was in complete abeyance*, is, to my mind, strong evidence of the existence of a so-called "muscular sense." For the existence of this sense we have the same kind of evidence that we possess for the existence of any other; we are "conscious" of its presence. It is aided by tactile impressions and by sight, and it is educated by their assistance; but it is a mistake, in my judgment, to say that the co-ordination of movement is entirely dependent upon sight and touch, or the combination of the two. It is present, as in M. Charcot's cases, when these are lost, defective, or not used; and, as I have often seen, it is diminished, or in abeyance, when they are completely intact. Of the latter assertion many cases of locomotor ataxy and of disseminated sclerosis afford abundant evidence. It is probable that in defect of tactile sensibility, or of sight, or other senses, the processes of muscular education would be defective; but, when once such education has been given,

and certain co-ordinated movements have become secondarily automatic, those movements may be perpetuated, either voluntarily or automatically. They *may* be independent of any sensational guidance; or they may be directed by an immediate appreciation of muscular condition; but it seems to me that the latter is the more probable hypothesis.

3. *The relation of the attacks to ovarian conditions* is a point of much interest and difficulty, both in regard of their onset, and also of the effects of compression of the ovary in their arrest.

As to the onset of the attack, it is well known that convulsive movements, of hysterical or epileptic sort, often commence with either some altered *sensation* in the head, throat, chest, epigastrium, abdominal or pelvic region, and in some feeling of pain in the limbs; or in some *spasmodic* movement of the muscles in the hands, toes, forearm, or leg. But in the vast majority of cases of "epilepsy," so far as my experience teaches me, there is nothing that could be tortured into a warrant for the use of the term "epileptic aura," as either a constant or even frequent precursor of the attacks; and with regard to hysterical paroxysms, they are, in the greater number of cases, vague in their physical origin, and commence with emotional disturbance, quickly followed by disturbance of the muscles that express emotion—viz., the face, the articulation-apparatus, the throat, and the respiration. It does not seem to me, therefore, to be philosophically correct to suppose that some very exceptional cases can establish the true pathology of either of those diseases. The very exact account given by M. Charcot's patients of the "aura" preceding their attacks is unlike anything that I have observed in epilepsy. The difference exists in the clearness of the description given of the series of sensations that the patients experienced, the length of their duration, and their variation in character—viz., pain moving upwards, palpitation of heart, throat, constriction, tinnitus aurium, and beating in the temporal region. When an epileptic has an "aura," it is sometimes one definite sensation of pain in or from a particular locality, or the commencement of spasmodic movement, in the periphery, which runs on into the attack; but in the greater number of cases there is no premonitory sensation or spasm; and when there is the former, it is of such vague kind that the patient cannot say whether it is an idea, a feeling, or a something indescribable, and incapable of localization in head, thorax, abdomen, or limbs. Its existence is recognized, but it passes beyond the powers of description.

With regard to the association of epilepsy with ovarian pain or tenderness, or with uterine disturbances, my experience leads me to say that it is only with extreme rarity that I have recognized any such relationship, and that the association has in the majority of these cases appeared to me to be accidental, and discovered to exist only after the cases had been long established and the patients had "suffered many things of many physicians," and among others, much questioning and suggestion of possible derangement in a system of organs to the performance of the functions of which they naturally attach, when in health, much importance, but often, when in ill health, attach undue importance.

Here, also, I may add that my experience of epilepsy in the male sex goes to confirm the position that I hold with regard to the female, so far as that disease is associated in its origin with changes in the reproductive apparatus. I have seen great numbers of epileptic boys and men, and in a very small number there has been some derangement of the sexual organs or functions; but in those who have presented anything abnormal, the abnormality has been one of the many sequels of the attacks, and not their cause. Epilepsy and hysteria involve much as their result which is often set down as their cause. Single and unoccupied life, often the consequence of these maladies, has its own range of symptoms.

M. Charcot thinks that the starting-point of disturbances, in the cases which I saw with him, is ovarian, and I do not for a moment dispute the correctness of his opinion with regard to the recurrence of the attacks in those individuals. What I doubt is the *causative* relation of ovarian change to the general nervous derangement, which, in my opinion, induces these attacks, and of which the ovarian irritation may be but one expression; and what I do not doubt is, that

such relation has any other than one of so-called "accidental" character, and that it is one only of rare occurrence.

The arrest of convulsive movements and the restoration to consciousness by pressure upon the ovarian region seem to me to be analogous to the stopping of epileptic and hysteric seizures by many other processes, all of them having one element in common—viz., a strong impression from without. Chloroform, ammonia, nitrite of amyl to the nose; a sharp box on the ear, or a loud and authoritative voice; the administration of musk, ether, salt, peppermint, or some other strong-tasting substance by the mouth; the compression of the limb from which an aura originates; the forcible extension of muscles which may be the first to contract; a dash of cold water in the face, or the rapid immersion of the extremities in a hot mustard bath—any or all of these may arrest attacks in many patients. But what I think it is of importance to observe is this, that impressions on the Schneiderian membrane are often successful when there is no nasal aura; that sounds and words are effectual when there is no preceding auditory change; that compression of a limb is often efficacious when no aura arises from that limb; and that cold and heat may be applied advantageously in the way that I mentioned, when the patient has no sensation of either of the reverse conditions, as an aura.

The arrest of attacks by the forcible extension of the muscles which are the first implicated in the attack has also some counterpart in the stoppage of seizures by bending fingers and toes forcibly and suddenly, and by the dash of cold water on the face, which often induces a sudden inspiration.

The compression of the ovarian region, which was very forcible, was such as would be, if the patient had not been insensible, of such sort and degree as to cause great pain, for there was undue ovarian tenderness on the anæsthetic side, and the merely physical and direct result of such impression would be the same in all the lower ranges of nerve action as it would be when consciousness was present. A "reflex action," breaking the chain of morbid phenomena, was, in this way, as I think, set up; and the cessation of attack was due to an impression on afferent nerves, which does by no means necessitate the idea of any direct and special causal relationship between ovarian conditions and the attacks.

4. The *differences to be noted* between the attacks observed in M. Charcot's cases and those of epilepsy are so marked that he has used the term "hystero-epilepsy" to characterize them. This expression, "epileptoid hysteria" would, I think, be more applicable to those which I saw with him, and many which I have seen elsewhere, apart from any changes of sensation. This is not a distinction without a difference, for the seizures are mainly "hysteric," but they have an "epileptoid" look at their onset.

With regard to the "aura" I have already spoken; there are some other points of very interesting character upon which I will say a few words. There was no pallor preceding the attack; no alteration of the pulse; no absolute arrest of respiration for longer than four or five seconds; no asphyxia; no dilatation of pupil; no divergence of eyeballs, but some slight convergence; no biting of the tongue; no epileptic stupor; no elevation of temperature, even after the recurrence of many seizures; and a mental state, when the attack was passed, of undue and abnormal brightness.

These points of difference from epilepsy proper are sufficient, I think, to take these cases from out that category, even when qualified by the prefix "hystero." Whatever the pathology of hysteria may be hereafter shown to be, the relationship of these hemianæsthetic people is more close with it than with the graver malady.

5. With regard to the *permanent rigidity* or "*contracture*" *of limbs* in these cases, I have only to observe that such condition is very common in hysterical people, who have neither anæsthesia nor seizures of the kind that M. Charcot has so well described, and that it, like a number of other curious derangements of nervous and muscular function, sometimes disappears after the application of electricity, the administration of a drug, or the occurrence of some shock, and sometimes when no so-called "therapeutic" agent has been used, and the patient has been abandoned to "Nature," ever "busy with a hand of healing."

6. The *modus operandi* of the cure of hemianæsthesia by metallic bands. The anæsthetic state, and its relationship to pressure and to metallic appliances, recalled to my mind so forcibly some of the phenomena which Dr. Elliotson described, and some which I had witnessed many years ago, that I suggested the association to Professor Charcot. I have twice seen anæsthesia induced by a touch, and that sufficient to enable the patient to bear the extraction of a tooth without the slightest alteration of expression or colour of countenance, and without the slightest acceleration of the pulse. I have seen the anæsthesia removed in a moment by another touch of the hand of the operator. Dr. Elliotson relates in *The Zoist* numerous cases of surgical operations of the severest sort performed in a state of insensibility, which he regarded due to some special power termed "Mesmerism." There can be no doubt as to the accuracy of the statements made with regard to the production of anæsthesia; and there can be no doubt as to the extreme rarity with which such anæsthesia can be produced. Dr. Elliotson was of opinion that certain metals drawn along the palm of the hand would send patients to sleep or produce catalepsy. Mr. Braid says that, endeavouring to prove this to the satisfaction of Mr. Wakley, M.P., by giving him the metals into his own hands, Mr. Wakley, "when he operated with the lead, the patient believing it to be nickel, the effect of nickel came, and when he used the nickel, the patient supposing it to be lead, no effect followed." (*Magic, Hypnotism, etc.*, by James Braid. 1852, p. 103.) In like manner, Dr. Haygarth's experiments with wooden tractors showed results identical with those which Perkins had made notorious by "metallic tractors."

I cannot but believe that the anæsthetic condition in the cases I have described is analogous to that occurring in those upon whom Perkins, Elliotson, and others have operated; that the condition is one of morbid mental (higher cerebral) change; that the phenomena are maintained by mental and moral impressions, and by suggestions from outside: that the arrest of attacks is one of a series of events, well known, but under different phases, in cases quite free from ovarian change or anæsthesia; and that the cure is due to a mental and moral impression coinciding with a course of treatment or a something done, and that it is not due to any electric, mesmeric, or galvanic current.

Is it possible that the anæsthesia exists only at the time of observation? There is change in the circulation, for the punctures do not bleed; but the loss of sensation cannot be due to vaso-motor spasm alone, or to any known condition of the peripheral circulation. A local anæmia of the limbs, sufficient to produce anæsthesia, and persisted in for months, would surely induce changes in nutrition of skin and muscles, with loss of power in the latter, whereas a temporary anæsthesia, under mental impression, might recur again and again without inducing any organic change.

One word more. I do not for a moment believe that any one of the patients that I saw with M. Charcot either invented, simulated, or exaggerated a single symptom; but that they were very rare and very interesting examples of a morbid state of the nervous system such as, in their special details, we do not often see in this country, but the study of which may throw light on many cases that we do see, differing from them in respect of inessential features, but which are at one with them in their general pathology and requirements.

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Hysteria with Hemianæsthesia and Ovarian Hyperæsthesia of the Opposite Side.

Dr. Thomas Barlow, assistant Physician to Charing-cross Hospital, reports (*Med. Times and Gazette*, May 19, 1877) the following case which is of interest because it is contrary to the ordinary rule laid down by M. Charcot, viz., that the ovarian hyperæsthesia is on the same side as the anæsthesia. (*Leçons*, p. 291.)

Florence V., aged eleven years and a half, was brought as an out-patient to Great Ormond-street, November 23, 1876. Her mother was a pale, weakly woman, but not hysterical so far as I could gather. The father, it was said, was very nervous, and his mother had been hysterical. This child's brothers

were easily frightened. Her troubles were referred to the fact that two years before she had been knocked over by a dog. The dog had scratched her a little, but had not bitten her. Very soon afterwards she was noticed to be dark round the eyes, and she began to have singing and dancing fits, and at other times would do nothing but say her prayers and hymns. Her "manifestations" after a while settled down into a definite form, the order of which the mother told me was a follows: In the midst of any occupation (most frequently when seated) she would begin to nod and pull faces, then to "claw" and pick at her frock, then to push forwards her head and chest. When her relations held her she tried to bite them, and threw herself into violent movements all over. At length she would "fall down as if she were shot, and go to sleep." More frequently after falling down she would scream out, complaining of "a man with a white sheet coming to her." In all cases after she "came to" she was very cold, wanted to pass water, then came and sat by the fire, and asked for something to eat. When the child came to the out-patient-room there was nothing specially noteworthy in her appearance. She was a timid, pale, languid-looking girl. She walked into the room, and made no complaint of pain. There was neither "contracture" nor paralysis, but all down the right side of the body and also on the left cheek there was absolute anæsthesia. She allowed a pin to be introduced anywhere over this region for nearly a quarter of an inch without manifesting any sign of pain, whilst she promptly resented any pin-prick on the left side except on the left cheek. The region of anæsthesia, with this exception, was strictly marked by the middle line, and over this region she was unable to localize a pin-prick. When gently pinched on the right side there was no blush, whilst on the left side a blush readily appeared. The muscles of the right side responded readily to faradism, but she did not flinch when the index of the single-cell Stöhrer was raised to the full, whilst on the left side a very moderate current caused her to wince. Neither the child nor the mother had been aware of this loss of sensation.

On examining roughly the child's "field of vision," I found it considerably limited. But it appeared to me to be equally so all round, and to an equal amount in both eyes. There was a small crescent at the apparent upper part of the disk in each eye; and Mr. Nettleship, who was good enough to examine the eyes within a day or two afterwards, told me that there was hypermetropia and astigmatism, but only to a small amount. Moderate pressure on the *right* inguinal region did not elicit any expression of pain, nor could anything abnormal be felt; but on the left side, at a spot one inch above the middle of Poupart's ligament, an olive-shaped body was felt, having its long axis parallel to Poupart's ligament. It had an elastic feel, and was slightly movable. The child's abdomen was so thin and flaccid that it was quite easy to make a thorough examination. I am quite certain that this body was separate from the intestine, and it appeared to me too low and too elastic for a mesenteric gland. The skin over it was not hyperæsthetic, but the slightest deep pressure caused the child to flinch. I have no doubt that the body felt was the left ovary; and that was the independent opinion of several others who examined the child. A few days afterwards, when showing this case to my friend Dr. Allen Sturge, he predicted that the application of faradism for a few minutes would restore sensation to the anæsthesic side. So, indeed, it proved. After faradising the limbs for a few minutes, the child became able to localize pin-pricks; and presently, although she did not feel pain so acutely as on the other side, yet she winced a little when she was pinched. Subsequent faradism caused her to wince to the faradic current, and much more to the pin-prick, than she had done at first. The left ovary was felt, but was not quite so tender as on the previous day. Three days afterwards the anæsthesia had disappeared, and the left ovary could not be felt. The "field of vision" was certainly larger. The anæsthesia has never reappeared—at all events, at the times when she has been in the out-patient room,—so that I have been unable to try, as I had wished, the effect of "metallo-therapeutics."

At the end of November and beginning of December she had at home some more fits of the kind previously described. In January, however, a perfectly new symptom began. She had what her mother called "blind fits." For

several hours at a time she would find her way about solely by "groping." She was brought to the out-patient room one morning in one of these "blind fits." It was very difficult to investigate. When I held up my fingers and asked her how many there were, she immediately began to feel with her hands, just as a blind person might. A moderate faradic current about the forehead and temples soon, however, "enabled her" to decide, and she certainly walked home without groping. Two or three times subsequently she was faradized in like manner, always with benefit, and these "blind fits" ceased about the middle of March. I regret that I did not examine her at that time for achromatopsy—the more so because, on inquiry lately from her mother as to whether the child had ever made any mistakes as to colour, it appears that she had very often done so; about the time of her blind fits she had brought a black reel of thread for her mother instead of white, and *vice versâ*, etc. She has greatly improved in general condition, and therewith become much less interesting as a "nervous case," under treatment by the best of all nervine tonics—cod-liver oil: she has no anæsthesia, the ovary cannot be felt, her field of vision is greatly improved, and there is no colour blindness. She has had lately one or two attacks of globus.

I presume that the ovary was slightly enlarged at the time it was felt. The mother was quite positive that neither after nor at any other time was there any menstruation. It is likely enough that other sensory defects—viz, of the special senses in addition to sight—might have been found if looked for; and I do not doubt that, if zealous investigation were pursued, other interesting phenomena might become manifest, but whether for the patient's advantage is another question.

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Reverberated or Reflected Painful Sensations.

In a paper read before the Société de Biologie, and published in the *Gazette Médicale de Paris*, M. GUBLER draws attention to certain painful sensations that are experienced at distant points when such nerve-containing tissues as skin are sharply pinched. These painful sensations he speaks of as reverberated, being, as it were, true painful echoes awakened by spontaneous or excited pain, and which manifest themselves at a distance, in parts in central nervous connection with the point of departure of the shock. The exciting pain must be acute, such as that resulting from pinching a piece of skin in a state of irritation or hyperæsthesia, or the scratching of a pimple containing an inflamed hair follicle, or the plucking out of a hair. The painful sensations, or echoes—to adopt M. Gubler's term—show themselves regularly at determinate points, always the same for the same point of departure; that is to say, a pain excited in one region will have its echo only in one other region, often very distant. Thus a pimple in the thigh irritated by the nail will determine a secondary painful sensation towards the hypogastrium; a sharp blow of the nail on this region will have its secondary echo at the base of the chest; while a shock communicated to the thorax will come out towards the wrist, sometimes at the radial, sometimes at the ulnar border. These secondary painful sensations have the following points in common: they appear on the same side of the body as the exciting pain, they spread exclusively on the anterior or posterior surface according to the starting point of this exciting pain, and are propagated from the interior towards the exterior, from the visceral cavities towards the cutaneous covering, and from the periphery towards the centre. A pain, *e.g.*, having its origin in one of the iliac fossæ often gives rise to a secondary shock in the hypochondrium of the same side.

The comparison of these reflected pains with the acoustic phenomena of an echo is so much the more justified, in that they do not resemble the initial pain that has caused them. Let the latter be a pinch, a bruise, or a wound, and the secondary pain will in each case be almost uniform in character, of short duration, and of very limited area, just like what would be caused by the prick of a needle.

The explanation of these phenomena is still involved in difficulty. The secondary pains occur at too great a distance to suppose them the result of the

sympathy of contiguity. To account for the propagation to a distance, we must fall back upon the mechanism of reflex acts; but in the ordinary type the sensory impression carried to the centre is reflected to the periphery in the form of movement, while here it would still be a sensation. Such an occurrence would imply the possibility of a centrifugal current travelling in a sensory nerve, a fact not generally admitted by physiologists. The difficulty, however, would disappear if we regarded the reflected pain as resulting from the metamorphosis of a motor current across the peripheral nerve-cells (Remak) which may be looked upon as a sort of diffused spinal cord. These secondary pains cannot be compared to the illusory sensations experienced by persons who have had their limbs amputated, for the latter seem to set out from the peripheral expansions of the nerves, and are referred to parts of the extremities no longer present; whilst the painful echoes are arrested, as it were, midway, and manifest themselves invariably at single determinate points. Accordingly, we may suppose that the initial pain, whether excited or spontaneous, is transmitted to the nerve-centre, and that thence the shock is reflected in a sensory trunk that is connected in the spinal cord with the sensory branches of the irritated region. This shock is propagated eccentrically, that is to say, in an inverse direction to the ordinary sensory current. This paradoxical current continues to travel a greater or less distance without giving rise to any sensation, or rather perception, until it is arrested, when a sort of reflux or return shock occurs, and consecutively a painful perception in the spinal centre. Naturally, the pain is felt at the point where the reflection takes place.—*Lond. Med. Record*, May 15, 1877.

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A New Form of Paralytic Disease.

Under this title Dr. MACGREGOR, of Fiji, describes a peculiar form of paralysis associated with the presence of a new species of liver parasite, of which he has seen eight cases, three of which were fatal. The symptoms of the disease appear to come on rapidly, with some fever, followed by generalized imperfect paralysis, with rapid atrophy of the affected muscles, the legs and arms being mainly involved, and the face, tongue, and sphincter muscles being entirely free. The extensor muscles appear to be usually much more affected than the flexors; in this and some other respects the disease bearing some resemblance to lead palsy. Death is usually due to œdema of the lungs consequent on defective action of the respiratory muscles. Dr. Macgregor carefully investigated all the circumstances of the cases, and could find no other cause than that which he assigns. In all the fatal cases, the hepatic bile-ducts were found to contain a large number of a species of fluke, which filled and distended them. This parasite presents important differences both from the Distoma hepaticum and the Distoma lanceolatum. Dr. Macgregor gives a very careful account and drawing of the general and minute structure, which it is needless to reproduce, since Dr. Cobbold, who has examined the parasite, states that it is identical with that described and figured by Dr. McConnell in our columns two years ago (*The Lancet*, Aug. 21, 1875, p. 271). This parasite was named by Dr. Cobbold "Distoma sinense," and there can be no doubt that that found by Dr. Macgregor is the same. All Dr. Macgregor's patients were Chinese, as were Dr. McConnell's, and Dr. Macgregor believes that the parasites are introduced by a species of snail, the "bêche-de-mer," which forms an article of their diet. He regards the paralysis as of reflex origin, but observes that it may depend upon the absorption of some new product generated by the parasite, which has a peculiar, heavy, disagreeable smell. The spinal cord was found to be healthy on microscopical examination. Dr. McConnell had no opportunity of ascertaining the symptoms or history in the case of his patient, who died an hour or two after admission to the hospital. The subject is a very interesting one, and may throw important light on the obscure subject of reflex paralyses.—*Lancet*, May 26, 1877.

The Effects of Bromide of Potassium in Epilepsy.

In the *Zeitschrift für Psychiatrie*, Band 33, Heft 3, Dr. WENDT, of Sachsenberg, gives full details of six cases of long-standing epilepsy with insanity, carefully observed for the purpose, for periods varying from nine to twenty-one months, during most of which time they were taking the bromide of potassium. His results are not all of them new, but may be noticed shortly.

In all the cases, the number of the fits was diminished. Doses of seventy or eighty grains in the twenty-four hours had only a slight effect; two drachms in the same time were generally found sufficient, but sometimes double that amount was given with advantage, in cases where the fits were very frequent.

In two cases the patients, after taking the drug for many months, seemed to be no longer affected by it, and yet these were the ones who had been most markedly benefited by it in the first instance. In five cases the mental condition was improved by the treatment, excitability and discontent being lessened; indeed two demented patients were considerably benefited, employing themselves as they had not previously done.

The toxic action of the drug was repeatedly observed; it consisted in disturbances of digestion and paralytic symptoms, *e. g.*, unsteady gait, hesitating speech, giddiness, susceptibility to fatigue. These nervous troubles were most marked towards evening. The men were far more tolerant of the drug than the women, but were frequently subject to acne; both the women suffered from inflammatory œdema of the legs. In all cases the soft palate showed very slight sensibility to touch.

All the patients observed lost weight after prolonged treatment by bromide of potassium, and this was especially marked in those cases in whom intoxication by the drug was caused.

The good effect of the drug upon the mental condition appears to last much longer, after its use has been discontinued or the dose diminished, than its action in reducing the number of fits; indeed, the improved mental state often persisted even though the epileptic attacks became very frequent during a suspension of the treatment.—*London Medical Record*, May 15, 1877.

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On a Mechanical Treatment of one of the Sequelæ of Pleuro-pneumonia.

Professor VON MOSENGEIL read a paper in the Medical Section of the Society of the Lower Rhine, in the session held at Bonn on the 15th November, 1875, with the above title, which is published in No. 48 of the *Berliner Klinische Wochenschrift* for 1876 (November 27th). The patient whose case is related is the Shakesperian reciter, Herr Linde, who was attacked, on the eve of a journey to America, at Cannstadt, by a painful subcutaneous abscess of the lower lip and jaws, etc., followed by fever, enlargement of the spleen, repeated rigors, pneumonia, and, after a while, pleurisy. The lower lobe of the left lung was chiefly affected. The fever was a severe kind of enteric fever, with diarrhœa, rose spots, etc. After partial recovery, the patient suffered greatly from dyspnœa, great breathlessness, with urgent desire to breathe. His oratorical experiences led him to attempt to relieve this by deeply drawn thoracic inspirations. Dr. von Mosengeil noticed that, when air was voluntarily and slowly breathed in, the affected lung would expand nearly as well as the other. He therefore put in practice a sort of modification of Sylvester's artificial respiration. He laid the patient on his back, with the thorax slightly raised, and folded the hands lightly, with the elbows bent nearly at right angles, so that the hands and forearm rested with their ulnar edges on the abdomen, near the navel. Then, at the commencement of inspiration, the arms were raised, and both hands brought into a prone position, so that when these were brought above the head the backs of the hands looked backwards; the arms were raised as high as possible behind the head, and then brought down again and pressed in by the doctor's hands, so as pretty strongly to compress the thorax. These manœuvres were repeated, and with such success, that after about ten or fifteen minutes all pain and dyspnœa had ceased, and both halves of the

chest expanded equally well. After about half an hour the unpleasant symptoms returned, but on repeating the process next day, the relief lasted longer. Finally, the patient was so convinced of the benefits received, that he imitated the process himself. It was remarkable that even on the first occasion the arms and hands became almost bloodless during the performance—visibly and palpably so. Dr. von Mosengeil explains this by the general anæmia of the patient, and by the increased pulmonary circulation inducing a certain deficiency of the circulation in the peripheral parts of the body. [It appears to the reporter to be dependent on the principle on which Esmarch's method is founded; and the comparative bloodlessness will, of course, depend, as Dr. Mosengeil says, on the total amount of blood in the body. This artificial respiration appears to have been highly successful in this case. *Rep.*]—*London Medical Record*, May 15, 1877.

Epidemic of Diphtheria.

A severe epidemic of diphtheria began in Vienna at the end of October, 1876, and many fell victims to the disease. The mortality was particularly great among children, the disease invading not only the poorer quarters of the town, but also those occupied by the higher classes. During a period of sixteen weeks, four hundred and nine children died from this disease, and the number of fatal cases up to the present time amounts nearly to five hundred. The greater number of cases occurred in the third quarter of the city (Landstrasse), where there is the greatest amount of poverty with the most defective sanitary arrangements. In this quarter a hospital for children has recently been established, the "Kronprinz Rudolf Kinderspital," and this institution received the most neglected and advanced cases of diphtheria. The house-physician, Dr. H. von Becker, published a very minute report of this epidemic in Nos. 3, 5, and 6 of the *Mittheilungen des Vereins der Aerzte Nieder-Oesterreichs*. This report contains the following observations, which are worthy of notice: The majority of the cases were of the asthenic type. Contrary to the usual statement that the period of incubation lasts only a few days, an incubation stage of a week was sometimes observed. As a preliminary symptom, in most cases (seventy-five per cent.) vomiting was present. Hemorrhages from the nasal passages and pharynx were frequent symptoms, and usually proved fatal. Slight albuminuria was generally present during the period of exudation, but it very soon disappeared. The nephritis, however, occurring at the end of the second week, led very often to sudden œdema, and acute effusions into the various serous cavities. Among the sequelæ of diphtheria, paralysis was the most frequent; not only were the muscles of the soft palate and of the extremities involved, but also the accommodation muscles of the eye.

The post-mortem examinations of more than fifty cases supported the views of some authors that the character of the membraniform layers depends upon the kind of epithelium. Thus, in those parts of the nasal passages lined by ciliated epithelium, membranous masses, similar to those in croup, could easily be removed; while in other parts, as in the pharynx, with squamous epithelium, the mass was firmly adherent to the subjacent tissue.

The membranous covering in the trachea was continued in most cases (seventy per cent. of all examined) below the bifurcation, extending usually to the right bronchus, and to the bronchial tubes of the first and second magnitude. Dr. Becker supposes that the disease is the result of a primary general infection. He observed three cases of diphtheritic infection through open wounds, with consecutive diphtheria of the pharynx.

With regard to the treatment, some remarkable experiments were made in the above-mentioned hospital with new preparations. These were neurin, tetramethyl-ammonium-oxide, and tetrethyl-ammonium-oxide. Professor Ludwig was the first to discover the antiseptic qualities of these preparations, and he was also the first to obtain neurin from the albumen of egg. The usual plan was to apply the remedies with a brush to the diseased parts, but in a few cases a solution was injected under the skin, and the results obtained proved—first, that the resolvent influence of this remedy upon the exudation is greater than

that of any other application; secondly, that by its means the odour from the mouth was much diminished; thirdly, that the general symptoms improve under the treatment by neurin, even when the local symptoms are more developed. Bloodletting, blisters, tartar emetics, and such like remedies are all very injurious.

Twenty-four cases of diphtheria have been treated according to Oertel's method, by the inhalation of steam, and this has been followed by the subsidence of the inflammatory symptoms. Air from a Hanke's pneumatic apparatus was directed through a reservoir of water heated to nearly the boiling point, and being thus saturated with steam was conducted through a tube of India-rubber directly to the affected pharynx. The separation of the exudation was found to be accelerated under the treatment. It is a remarkable fact that of all the cases thus treated, none exhibited secondary pharyngeal paralysis to any marked extent; in the few cases in which this complication occurred, the symptoms were very slight. The temperature was always diminished by the exhibition of salicylate of soda.

Vienna has also been visited by another epidemic—viz., one of typhoid fever. Since the second week in February, cases of this disease have frequently occurred; and, from the 1st of February to the 11th of March, 231 persons (157 males and 74 females) were attacked by it. The majority of the cases occurred in the low-lying westerly quarters of the city. All the hospitals were crowded. The total number of patients from all causes received into all the hospitals rose from 3677 in the middle of February to 3768 at the end of March. Physicians were directed to give notice to the authorities of all cases coming under their observation, and to send into hospital all patients who could not be properly attended to at home.—*Med. Examiner*, May 3, 1877.

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Latent Cancer of the Stomach.

In an important thesis, lately published, on this subject (abstracted in *Journal de Médecine et de Chirurgie Pratiques*, April, 1877), M. CHESNET, basing his conclusions on numerous observations, brings to light the fact that not only may cancer of the stomach reveal itself by no other signs than a little dyspepsia, or by a cachexia of which we cannot ascertain the cause, but that it may produce ascites like cirrhosis, anasarca like Bright's disease, that it may perfectly simulate tuberculosis, chronic bronchitis, cardiac affection, etc.

The author has divided his observations into ten categories. In the first, he deals with cases in which the malady has been absolutely latent, nothing during the life of the patient having drawn attention to the stomach, whilst the lesions found there by chance after death were much advanced. In the second category are found the cases in which the only symptom observed was dyspepsia. In the third class, uncontrollable vomiting during pregnancy led to the idea that one only had to deal with the ordinary accidents of this condition, whilst they were maintained by a cancer, probably pre-existent. In another class M. Chesnet places a case in which the patient presented, as the morbid symptom, anasarca, and died of purulent pleurisy. There was no albumen in the urine; this fact, as well as another given by M. Rendu, shows that, in cases of anasarca, accompanied by cachexia without albuminuria, we may suspect cancer of the stomach, even when there are no gastric symptoms. The ascites due to a latent cancer of the stomach, has often caused a false diagnosis, either of cirrhosis, or tuberculous peritonitis, as many cases ranged under the succeeding category show. In the form of latent cancer of the stomach, called thoracic by M. Chesnet, very different cases may occur. Thus, at first, we may suppose that there is pulmonary tuberculosis, and then that there is nothing serious in the lungs, but that the stomach is the seat of the lesion. M. Bucquoy, however, did not commit this error in a case where a patient presented most of the usual symptoms of tuberculosis, without auscultation revealing serious pulmonary lesions; basing his opinion on the cachectic state of the patient, not regarding the state of the lungs, this physician, although there were no gastric symptoms, diagnosed a cancer of the stomach, which was

verified by the necropsy. In other cases, where pulmonary tubercle and cancer of the stomach coexist, it is the last which, though the most important, escapes observation. Lastly, this cancer may have for a consequence cancerous angioleucitis of the lungs, which betrays itself by grave symptoms, as cyanosis and dyspnœa, which prevent the cancer of the stomach from being recognized. There are, also, cases in which palpitations, dyspnœa, even pericarditis by propagation, have been considered, in persons affected with cancer of the stomach, only as the expression of a primary cardiac affection.

Some patients present gradual emaciation, progressive anæmia, a slow cachexia without manifest local symptoms, and differing much from the cancerous type of cachexia; in these cases, we must always think of cancer of the stomach. Lastly, in some cases the cancer is multiple, and is very manifest in other parts than the stomach; this last organ is almost always neglected in the diagnosis.

Why, then, is it that there are cancers which give rise to such slight symptoms, while others signalize their presence in so unmistakable a fashion? It is difficult to answer this question; it is, however, probable that their seat is in a part far removed from the orifices of the body; the reactional state of the subject (idiosyncrasy, age, etc.), and the more or less altered condition of the mucous membrane in the vicinity of the lesion are the principal elements of the problem. However this may be, it is established that the manifestations of latent cancer are, as local symptoms, anorexia, gastralgia, vomiting of food or glairy mucus; as general symptoms, œdema, local or general, emaciation, loss of power; and, lastly, as secondary phenomena, diarrhœa or constipation. All these symptoms, whether single or combined, when they occur in an obscure pathological condition, should induce careful examination of the stomach; and, in certain cases, would even warrant the diagnosis of cancer of that organ.—*Lond. Med. Record*, May 15, 1877.

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On Aneurism of the Right Vertebral Artery.

In the *Presse Médicale Belge*, No. 20, 1876, Dr. LEDAIRE records a case in which an aneurism was situated on the right side of the spinal cord, close to the fork-like junction of the two vertebral arteries to form the basilar. The upper part of the enlargement was regular, the lower sac-like in form, and the size of the whole tumour about that of a hazel-nut. On the corresponding portion of the left vertebral artery there were also two dilatations of small size. The cause of these changes was found to be an atheromatous process which had been going on in the walls of the vessels. The patient was sixty-three years of age, and had given no evidence of disease. Death occurred suddenly, from hemorrhage into the meninges of the brain.—*London Med. Record*, Feb. 15, 1877.

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Hæmophilia.

The family Mampel, of Kirchheim, near Heidelberg, supplies an example of this. Its progenitors, both healthy persons and of healthy families, married in 1798, and had six sons and four daughters. Among the former were three "bleeders." In the next generation among the thirty-two children, there were thirteen "bleeders." In the third generation there was only one "bleeder." The "bleeders" were all of the male sex, and externally exhibited no difference from any other member of the family. The children of the "bleeders" remained exempt from the disease, and in general it was transmitted only by the females of the family, who themselves were, as far as inclination to bleeding was concerned, in a normal condition. Of the seventeen "bleeders" who, in the course of three generations, appeared among a family of about one hundred individuals, nine died from hemorrhage, some from insignificant wounds, and others from subcutaneous intermuscular bleeding, sometimes produced by slight contusions. There were also hemorrhages from the gums, the nose, and the mucous membranes of the bronchi, the stomach, and the bladder, and repeatedly bleed-

ing into the joints. Of these seventeen "bleeders," two died during the first year, seven between the first and seventh years (five from hemorrhage), and five (four from hemorrhage) in their fifteenth, twenty-fourth, thirty-fourth, thirty-fifth, and fifty-fifth year.—*Med. Times and Gaz.*, May 5, 1877, from *Wien. Med. Woch.*, March 17.

Surgery.

On Shock after severe Injuries and Operations: with a Contribution on Abdominal Sections.

An instructive article on Shock, by Professor von Nussbaum, is contained in the *Ærztliches Intelligenz-Blatt* for March 13th.

When reflex paralysis of the heart occurs after severe laceration of peripheral nerves, the condition is defined as the shock of the injury; if with fatal result, we say that death has been caused by the shock of the injury, and necropsy is not expected to afford any explanatory phenomena. Formerly, deaths after the greater injuries and operations were attributed to shock, pure and simple, in vastly greater numbers than in recent times; not because people are now more hardy than they were, but because the progress of science has enabled us to correct the errors which included deaths from shock and from other causes, now well known and distinguishable, in a common category. With Czerny, Dr. Nussbaum would refuse to attribute to shock all deaths from injuries, when during a moderate period satisfactory progress has been made and no danger has been perceptible.

The muscular tissue of the heart performs its normal functions so long as endosmose and exosmose permit a normal nutrition of the muscle-cells; and impaired function of this tissue implies a disturbance of the chemical and electrical processes of which it should be the seat.

As one cause of this disturbance, he instances the absorption of decomposing fluids in any tissue or part; especially in the peritoneal sac, the capacity of which for imbibition he discusses at length, quoting experiments by Wegner.

In cases of very rapid and complete absorption of septic peritoneal contents, death is doubtless caused by septicæmic collapse, though wrongly attributed to pure shock.

Then there is the occasional sudden death of old people after a day or two's satisfactory progress, often wrongly attributed to shock, but which he accounts for by loss of blood; considering, as he does, that hemorrhages, not immediately fatal, are often direct cause of death after a short interval necessary to the full production of the ill effect which comes on suddenly, though the patient may previously seem well. A similar sudden fatality attends severe railway accidents and consequent amputation in even young, healthy, strong men, and is wrongly imputed to pure shock, but, in Nussbaum's experience and that of Virchow, Bergmann, Czerny, Uffelmann, Wegner, Busch, Hulm, and von Buhl, may be safely attributed to fat-embolism, the effects of which are seen in severe dyspnœa, œdema of lung, and sudden death. Such calamity has been observed even in cases of simple fracture of the leg. Then comes abstraction of heat, from sudden and extensive cooling of the abdominal viscera, which has been experimentally found by Wegner to be a competent fatal agent, and which he ably reviews *in extenso*. Nussbaum gives a practical *résumé* then of the following phenomena which are to be borne in mind and combated, though not to be confounded with mere shock, to which they lead, but from which they are to be distinguished—septicæmia, senile anæmia, fat-embolism, in crushings of bones, and abdominal cooling. This forms more than half of the essay, the rest of which consists in a relation of several most successful operations performed under the antiseptic conditions laid down by Professor Lister, to whom

he pays a devoted tribute of admiration, and whose system, considered by some an infatuation, he warmly eulogises; contending that the unmerited impeachment of idolatry is worth submitting to in the face of such achievements as Professor Nussbaum has himself been thereby enabled to attain.—*London Med. Record*, May 15, 1877.

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Fungus of the Dura Mater.

Dr. GENZMER (Halle) read a paper before the Congress of German Surgeons (*Med. Examiner*, May 3, 1877) on the extirpation of a large fungus of the dura mater, the operation terminating fatally in consequence of the entrance of air into the longitudinal sinus. A woman, sixty-three years of age, sought admittance to the clinic of Professor Volkmann on account of a perforating tumour of the dura mater. During the four weeks that she was under observation the tumour increased, and the patient began to complain of vertigo and of a feeling of numbness in the right arm. The tumour was extirpated by Professor Volkmann. To lay it bare the perforation of the skull had to be enlarged to a diameter of eight centimetres, the tumour being the size of a man's fist. In the act of removing it and severing its last connections with the falx cerebri, the free hemorrhage being at the same time quickly staunched, the whirring sound of air entering the veins was heard. The patient became immediately collapsed, and died soon afterwards without recovering consciousness. The autopsy showed the presence of air in the right heart and in the vessels of the lungs, but no great amount of bloodlessness. Between the posterior lobes of the brain there was a large opening in the skull, where the tumour and together with it a piece of the superior longitudinal sinus, an inch in length, had been removed. Microscopic examination showed that the tumour was a spindle-celled sarcoma, the cells being small. To prove the possibility of the entrance of air into the heart through the opened sinus, Dr. Genszmer had made nine different experiments on dogs. In these experiments the skull was opened with a chisel, and the superior longitudinal sinus divided at its posterior part. In six cases the external air forced its way into the right heart, and the animals died very shortly afterwards (eighteen minutes). In three cases the heart contained no air and the central end of the sinus showed a thrombus. The animals died in forty-five minutes. In two of them the respiration was carried on through tracheal canulæ. The air did not enter until the sinus had been bleeding for some time; its entrance was especially favoured by deep inspirations and artificial dyspnœa, and very essentially assisted by the removal of the blood. To prevent the entrance of air during the operative opening of a cerebral sinus it is therefore necessary to take care that the pressure of blood is not lessened, that no violent inspiratory movements are made, and that the wound in the sinus is kept continually under fluid. This latter is easily effected by constant irrigation. Forcible inspirations are prevented by deep narcosis. If the hemorrhage has been very profuse, the blood pressure can be maintained by tightly bandaging the limbs. Compression of the jugular veins is not advisable, as it would increase the hemorrhage without hindering the entrance of air through the vena azygos and the vertebral veins. Dr. Genzmer believes the successful extirpation of perforating tumours of the dura mater to be quite practicable, the more so, as his experiences in the Halle clinic entitle him to conclude that any danger from purulent meningitis can be completely warded off by the antiseptic treatment.

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Hygiene of the Eyes in Children.

Dr. GALEZOWSKI recently read a paper at the Société Médicale d'Emulation (*Union Méd.*, April 7), entitled "Some Considerations concerning the Hygiene of Sight in Children," of which the following is an abstract:—

With respect to children in early infancy the following rules should be observed: 1. The bed of the infant should be so placed that on waking it does not have its face towards the light. It is after sleep that the eyes are most sensitive and delicate, and if the light strikes them at that time it often induces

contractions of the internal muscles which may become permanent. In fact, according to Cuignet, the photophobia which in young infants accompanies either hypermetropia or inflammatory affections of the eyes is one of the principal causes of convergent strabismus. 2. When the infant is taken out in the air it should have its face protected from the sun by a blue or green veil, and not—contrary to the usual practice—by a white one. The light which traverses a white veil is very dazzling, and greatly tires the eyes. 3. The nurse of the infant should accustom herself to carry it sometimes on one arm and sometimes on another, for the child is constantly trying to look at its nurse, and may insensibly acquire the habit of looking only to the left or to the right, whence may arise strabismus. 4. In choosing nurses we should reject those who have bad eyes or who squint. The disposition to imitation is carried on in infants, even of the earliest age, to such a height that they may sometimes be seen almost uninterruptedly winking, because their nurses, having bad eyes, are obliged to keep them half closed in the light of day.

The importance of observing the hygiene of the eyes is much more important with regard to children going to school or entering upon apprenticeship; and in order that their vision be not prematurely damaged, it is necessary that the occupations which they are called to should be carried on under the best hygienic conditions, and especially that the school-rooms and workshops be properly lighted. Every child on entering a school should have its eyes minutely examined by a medical officer or oculist attached to the school, or by one employed by the parent, a certificate being furnished in which is stated the refractive power of the eyes, the sharpness of vision, and all other particulars necessary for a knowledge of the exact state of the eyes in each student. The eyelids should also be very carefully examined in order that any child suffering from contagious granular ophthalmia may be refused admission. An exact knowledge of the sharpness of vision of each child is indispensable, in order that arrangements may be made in conformity with individual aptitude and range of vision. Thus, it is usual in classes to place children according to their merit, at the top or bottom—a practice indeed proper enough in the pedagogic point of view; but it may happen that those who are myopic get placed too far off from the blackboard, so as to have to strain their eyes very injuriously. In order to see better, such children make immense efforts, winking and nearly closing the eyelids, and inducing spasmodic and involuntary contractions of the accommodation muscles, which, according to the accurate observations of Dobrowalski, contribute to the development of progressive myopia. The most effectual means of preventing this is to suppress the efforts at accommodation and to facilitate children seeing at both long and short distances. Here arises the question as to whether myopic children should employ glasses; and the answer is, that they should do so if the myopia is very considerable, and should not wear them when the myopia is but slight, and capable of being obviated by placing the subjects of it near the objects of their study. So that the place of a child in its class is really a hygienic question to be seriously considered. When the myopia exceeds $\frac{1}{12}$, glasses should be employed, and even when it is below $\frac{1}{8}$, precautions have to be taken with respect to reading and writing, and against the progressive development of the affection. The researches of Cohn and others have shown that school work, especially with insufficient light, contributes to the development of progressive myopia and the increase of posterior staphyloma; and without going so far as these German observers, who admit the progression of myopic lesions, such as staphylomatous and atrophic lesions of the choroid, it may be said that the employment of the eyes in insufficient light is one of the aggravating causes of an already existing myopia. A useful precaution to take is to substitute for long tables and benches (as has been done in many schools in England) those of a length only sufficient for two or four children. They should also be more or less high according to whether they are intended for myopic pupils or others. Very high desks also are exceedingly convenient for those having exceedingly short sight, and who are always obliged to hold their heads low while at work. By this means they are to place the objects of study at a suitable distance from the eye, without inducing congestions of the eye or head. When the myopia exceeds $\frac{1}{8}$, feeble con-

cave glasses should be employed, as they enable the children to work without fatigue.

In regard to the illumination of school-rooms, daylight should always come from the left side in relation to the students, and never from the right or the front. This direction of the light is especially favourable for writing, as the hand does not then project its shadow on the copy-book. Benches should not be placed opposite windows, for too much light is very prejudicial; nor should the classes ever be ranged towards the south, working being very fatiguing with the sun on the windows. Photographers and painters so well understand the inconvenience of this that they always choose their studios with a northern or eastern aspect. The solution of the question of lighting school-rooms in the evening is a matter of difficulty, as it is one of urgency, great complaints having been made by the friends of children since gas has come so much into use. But the fatigue and congestion of the eyes are really produced by a deficiency in the amount of illumination, for gas in itself is nowise prejudicial, being in fact a somewhat whiter light than that of Carcel's lamps, and therefore more favourable to the sight. It induces fatigue of the eyes, however, whenever it becomes vacillating, but this may be remedied by appropriate burners. Gas should not be placed at a greater height than are ordinary lamps, otherwise the light becomes insufficient, and the children are then obliged to make excessive efforts in order to read fine print. The beautiful "sunlights" adopted in so many public places in England and Belgium diffuse so large a quantity of light that work can be carried on as in daylight. Their adaptation to schools would be of great advantage by enabling the children to work without fatigue.—*Med. Times and Gaz.*, April 14, 1877.

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The Artificial Membrana Tympani.

In the *Medico Chirurgische Presse*, Professor GRUBER, of Vienna, makes some observations on artificial membranes. He gives cotton-wool the preference over the elastic membrane of Toynbee, on account of the surgeon being able to adapt it better to different conditions of the natural membrane. He thinks that by it a continuous chain for the conduction of sound is more easily formed. He has made, and praises, artificial membranes of linen, and describes an instrument for making, and a pair of forceps for introducing them.

Professor Gruber frequently uses an artificial membrane as a conveyor of medicaments, preferring it to the in-dropping of solutions when he desires to limit the action to certain spots, or when there is a process of healing going on. The interference with this process by the repeated washing of the tissues by lotions is spoken against; and to prevent external influences from interfering with that process, he uses English plaister or linen as a covering to the healing tissue. He thinks the membrane of linen is better adapted for the application of medicaments than a piece of cotton-wool, on account of the latter pressing on and interfering with the circulation of the meatus and cavity.

[Cotton-wool has been, as a rule, preferred in England, both as a means of improving the hearing, and as a medicament-bearer. Its simplicity recommends it to the patient, who is easily taught how to apply it, and it is preferred by surgeons for the same reasons as those given by Professor Gruber. Goldbeater's skin is used sometimes by the reporter, as a protector to healing perforations. It has advantages and disadvantages compared with the linen or plaister.—*Rep.*]—*Lond. Med. Record*, May 15, 1877.

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On the Electrolytic Treatment of a Large Naso-Pharyngeal Polypus.

The case described in the *Annali Universali di Medicina e di Chirurgia* for February, was that of a healthy shoemaker, aged twenty-eight, who had on the right side a naso-pharyngeal tumour of firm consistence, almost sessile, and accompanied by repeated epistaxis. The epistaxis had been noticed two years, and the tumour about nine months, when it was removed by the late Dr. ANTONIETTI at the hospital of Monza, by the use of an *écraseur*. The size of the

growth was that of a small hen's egg, and it was supposed to be of a fibrous composition.

After a few months recurrence began, and, one year and three-quarters after the first operation, the first electrolytic sitting took place (Sept. 1875). Two steel needles attached to the negative pole were put into the tumour from the mouth; while a silver one was passed into it through the nose attached to the positive pole. A zinc and copper battery of twenty-one cells, with sulphate of copper solution, was used. Six sittings, of a quarter of an hour each, occurred at intervals of three months, six weeks, seventeen days, a fortnight, and a month, respectively. A little diminution took place; but the man left the hospital in three months, thinking his case hopeless, and wishing to die at home. However, in August, 1876, the growth had so far diminished in size as to be insignificant. Recurrence again began in the following October, and the growth spread into the right nasal fossa, beside enlarging in its pharyngeal portion. Hemorrhages, alteration of voice, and great dejection of the patient's strength again took place, till at last he was admitted into the Ospedale Maggiore at Milan, under the care of Professor Albertini, who successfully removed the tumour, for the third time, with the aid of a galvanic cautery.

A special process was devised, the publication of which the writer expects at the hands of its employer at a future date.—*London Med. Record*, May 15, 1877.

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The Surgical Treatment of Empyema.

There are few cases which cause more anxiety to physicians than patients suffering from empyema, and we fear that uncertainty as to the best mode of treatment considerably aggravates this anxiety. Time is often wasted while half measures are being tried and found to fail; and sometimes it is only as a *dernier ressort*, when the patient's strength is exhausted and the case is desperate, that the true curative treatment is adopted. When the existence of pus within the pleural cavity has been established, there can be no doubt of the necessity for its evacuation. The question remains, how can this best be accomplished? Aspiration is the easiest method, and in children is frequently very successful; for any pus that remains after the operation is not unfrequently absorbed, and masses of lymph become organized. But in adults we do not meet with these favourable results; the hopes excited by the immediate relief following the aspiration are only too commonly dissipated by the evident signs of resecretion of pus. The fact is that the aspirator never completely empties a chest, and the fluid left behind is neither absorbed nor organized, but causes further suppuration. The other plan of making a free opening into the chest low down completely evacuates the pus, and allows of the gradual obliteration of the pleural cavity by the expanding lung, collapsing walls, and displacement of adjacent viscera; and it offers the only chance of cure in the great majority of cases of empyema in the adult. But there is a dread of this operation in the minds of many, owing to the evil results not unfrequently attending it: prolonged suppuration, destroying life by hectic, albuminoid disease, or acute tuberculosis; or decomposition of pus, with consequent blood-poisoning. Here it is that we think the antiseptic treatment can be employed with the happiest results; for it has been in cases of large abscesses that its most decided triumphs have been won. Where only pure non-irritating air is admitted to the pleural cavity the suppuration at once or soon ceases, and the patient escapes the danger of blood-poisoning. A drainage-tube should be employed, and care should be taken that it be passed just into the pleura; but it is unnecessary that any of the tube should be free in the cavity. Several cases are on record where these tubes have slipped into the pleura, and have given rise to trouble in extraction. This accident can be quite prevented by adopting the simple expedient of transfixing the outer end of the tube with a hare-lip pin, which crosses the wound and effectually prevents the tube passing in; and if the ends of the pin be secured to the chest by strapping, it equally prevents the tube being forced out of the opening. The tube should not be withdrawn until all secretion from the pleura has ceased.—*Lancet*, May 5, 1877.

Gastrotomy.

Dr. SCHOENBORN (Königsberg) described, at the late meeting of the Congress of German Surgeons (*Med. Examiner*, May 3, 1877), a case in which he had performed gastrotomy. A little balloon of India-rubber was introduced into the stomach and distended by inflation. The stomach was thus pressed against the wall of the abdomen and easily laid bare by an incision. It was fixed by means of several stitches to the borders of the wound, to which it subsequently became firmly adherent. The wound was afterwards enlarged to a length of five cm., and through this opening the patient received his food, three beefsteaks a day, for a whole quarter of a year. He had to masticate the morsels first, and then somebody else introduced them with a spoon into the stomach-opening. It was very remarkable that the cravings of thirst could never be quenched by pouring fluid directly into the stomach. During the discussion of this case Dr. Schoenborn recommended that a fistulous opening should be made before the œsophagus becomes completely closed, for afterwards it would be impossible to introduce a small India-rubber balloon into the stomach.—Dr. Trendelenburg had performed gastrotomy some weeks ago on a boy suffering from a stricture of the œsophagus caused by swallowing some sulphuric acid. He hopes to remove the disease by beginning to treat it from the interior of the stomach.—Dr. Kuester had performed the same operation on a man of sixty, but without success.—Professor Billroth was of opinion that the operation would often be resorted to in future times. He mentioned that a dog, whose stomach had been removed, lived on very comfortably without it, and even grew fat.—Dr. Hahn (Berlin) had effected a passage through strictures of the œsophagus by passing bougies of whalebone.

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Displacement of Kidney; Pelvic Abscess; Puncture by the Rectum; Uræmia; Death.

Dr. WOLFLER relates the following case in the Leipzig *Centralblatt*. The patient was forty-five years old, and had passed no urine for five days. The illness began with sickness and a rigor. The day after no urine could be passed, and the catheter brought away blood only. The desire to urinate was intense, but there was no prominence at the vesical region. The point of the catheter was directed from the median line to the right or left; by deep pressure upon the abdomen percussion gave a dull note, but unless pressure were used the note was tympanitic. The right wall of the rectum was pushed forwards by a fluctuating tumour. Puncture *per rectum* brought away a quantity of brownish-green liquid, tenacious, odourless pus. The catheter afterwards brought away a quantity of dark-brown urine. The necropsy showed that the right kidney was situated abnormally low down, and had degenerated into a sac, which had compressed not only the right but also the left ureter.—*London Med. Record*, April 15, 1877.

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Case of Multiple Perineal Calculi.

Dr. N. ZOJA relates in the *Annali Universali di Medicina e Chirurgia* for February, the case of a young man aged 18, who, ever since childhood, had required occasional catheterism on account of retention, and who, after each operation, had usually remained for months independent of medical aid.

Dr. Zoja found a perineal tumour of the size of a fist, and with a metal catheter ascertained the presence of calculus in that situation; and, in addition, urethral stricture in front of the stone. He incised the perineum under chloroform, and took out about a hundred calculi, of which about twenty were as large as a filbert, one only of which caused urethral obstruction. After incising the prostate through the wound, he sounded the bladder with his finger, and made sure that no stone remained anywhere in the neighbourhood. The stones were facetted. He then incised the stricture with a blunt-pointed bistoury, having found that its length was nearly half an inch. The case progressed uninterruptedly well, and a perfect cure resulted.

He quotes Porta, who refers to three similar cases: one of Mott's with several dozen stones; one with twenty-seven in the practice of Chelius; and a third of Colot's, where eighty were passed in the course of three months. The writer concludes that the calculi were not of prostatic origin, as they consisted of magnesian carbonate, uric acid, and ammonio-magnesian phosphate.—*Lond. Med. Record*, May 15, 1877.

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A Remarkable Case of Spermatocele.

Mr. JAMES BAKER, late Resident Surgeon at the Royal Infirmary, records (*Edinburgh Med. Journal*, June, 1877) the following case of spermatocele, which presents so many points of interest as to warrant a short account of it being published.

On the 5th May, 1876, a man about sixty years of age, named H. W., was admitted into the surgical wards of the Edinburgh Royal Infirmary, under the care of Professor Lister. The reason that he had gone to Edinburgh to seek surgical advice was that he had a swelling of the scrotum, which, he stated, he had first noticed about four years previously; since that time it had gradually increased in size. So far as he could remember, it had not been caused either by injury or overstraining.

On making a careful examination, there was found to be a large swelling on the left side of the scrotum, extending into the abdomen, along the inguinal canal. It was somewhat conical in shape, the apex being downwards. On percussion, the line of absolute dulness extended laterally from one inch to the right of the spine of the pubes to a point over Poupart's ligament, four inches to the left of the pubic spine, and vertically upwards for two and a quarter inches, measuring from midway between the anterior superior spine and the symphysis. The swelling was tense and firm. It did not disappear on lying down, nor increase in size on coughing, though it presented a marked impulse. On placing the fingers of one hand anywhere within the area of absolute dulness mentioned above, and pressing with the fingers of the other hand on the scrotal swelling, a sense of fluctuation was obtained with great distinctness. The testicle was to the front, and about one inch above the lower margin of the scrotum.

On May 8, Mr. Lister, using a small canula and trocar, tapped the swelling posteriorly, and evacuated seventeen ounces of a turbid, almost milky-looking fluid. Two drachms of the tincture of iodine of the Edinburgh Pharmacopœia were then injected, and thoroughly diffused throughout the whole cavity. On the following day the patient expressed himself as feeling perfectly well, and without any pain. The scrotum was considerably larger than immediately after the operation, but there was no redness of the skin. On the 10th, although he had no uneasiness when the parts were kept at rest, yet on pressure being made over the inguinal canal, pain was felt. That part of the abdomen in which, before the fluid had been drawn off, a sense of fluctuation could be obtained, was found on percussion to be resonant. The scrotum, which at this time appeared to be as prominent as ever, was noticed four days afterwards to be distinctly decreasing in size. It became less and less, until, on the 20th of May, according to the patient's account, it was smaller than he ever remembered it to have been. Fluctuation could still be elicited, but not higher than the level of the pubic bone in the inguinal canal. Three days afterwards, rather more than a fortnight after the operation, the patient was discharged from the hospital, perfectly well, never having presented any symptoms of constitutional disturbance.

It should be stated that, immediately after the fluid was evacuated, a portion of it was examined microscopically, and was found to be crowded with spermatozoa; the rest was placed on one side in a glass vessel. Twenty-four hours afterwards there was a sediment about a tenth of an inch in thickness at the bottom of the vessel, composed of spermatozoa, which, when seen under the microscope, exhibited vital movements.

It will at once be seen that the case was one of considerable interest.

Not only was the quantity of fluid unusually great, but the distance the sac

extended above Poupart's ligament was especially noteworthy, being so largely out of proportion to the amount of fluid in the scrotum.[1]

Another very interesting feature of the case was the fact that spermatozoa were observed *alive* in the fluid, and that so late as *twenty-four hours after its evacuation*. I have only succeeded in finding on record two cases of spermatocele, in which spermatozoa were seen alive in the fluid drawn off. One is a case of Mr. Liston's, alluded to by Mr. Curling in his work *On the Diseases of the Testis;* the other is reported by M. Paul Dauvé in the *Gazette des Hôpitaux* (21 March, 1867), and mentioned in the *Edinburgh Medical Journal* (Nov. 1867). In the former of these two cases, the time after its evacuation at which the fluid was examined is not stated; in the latter, moving spermatozoa were noticed seven hours after the operation.

One other point in the case, the details of which I have related, deserves mention; and that is, the admirable result of using the strong tincture of iodine of the Edinburgh Pharmacopœia. From the almost unvarying success attending its use by Mr. Syme and Mr. Lister, it may be looked upon, if not as a certain cure, at any rate as greatly superior to the weaker preparations of the same drug.

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On Contraction of the Fingers (Dupuytren's Contraction), and its Treatment by Subcutaneous Division of the Palmar Fascia and Immediate Extension.

In a brief paper on this subject read before the Royal Medical and Chirurgical Society (*Lancet*, June 9, 1877) Mr. William Adams directed attention to one form only of finger contraction—namely, that which has been proved by Dupuytren to depend upon contraction of the palmar fascia, and not involving the tendons or sheaths of the tendons, as generally supposed. After quoting the account of Dupuytren's dissections, the author referred to another dissection by Goyrand, which confirmed the account given by Dupuytren; and also to Mr. Partridge's specimen in King's College Museum; and to a severe case of contracted fingers under his own observation, in which the hand was torn open by a horse. In all these instances, the contraction was shown to depend upon the fascia alone, which passed across like the string of a bow, whilst the tendons in their sheaths were seen lying at a distance along the concavity of the curve. The greater the contraction, the greater the distance between the fascia and the flexor tendons. With regard to the cause, the author considered that it depended entirely upon constitutional causes, and not upon any local cause, such as the use of tools in various occupations, etc. The author believed it to be essentially of gouty origin, though occurring generally where there is a tendency to rheumatic gout, rather than true inflammatory gout. With regard to treatment, the author reviewed the operations by open wound, as practised by Dupuytren, Goyrand, and more recently by Professor Busch, of Bonn, whose results are reported by Dr. Madelung; after which he referred to the subcutaneous method of operating, which has not been generally regarded with much favour. The author condemned all the operations by open wound on account of their severity, risk of suppuration, and tedious healing. He then fully described the details of the subcutaneous method of operating, with some improvements, and also the method of after-treatment which he had adopted of late years. These consisted—1st. In the subcutaneous division of all the contracted bands of the palmar fascia, and its digital prolongations, that can be felt by as many punctures as might be necessary, the smallest tenotomy knife being passed under the skin, and cutting from above downwards. 2d. Immediate extension of the contracted fingers, the fingers and hand to be bandaged to a splint. 3d. The bandage not to be removed until the fourth day, when the punctures will be found to be healed. 4th. Extension splint to be worn night and day for two or three weeks, and afterwards at night for three or four weeks, motion being employed every day. The author believed relapse of the deformity was guarded against by this method of multiple subcutaneous divisions of the fascia and immediate extension.

[1] In a case of Hydrocele of the Tunica Vaginalis, described by Mr. Lister in the Edinburgh Journal, there was a large extension of the sac into the iliac fossa, but at e same time an extraordinary size of the tumour in the scrotum, reaching up even the external ring on the other side.

Researches as to the Relative Value of Different Lotions in treating Chronic Ulcers of the Leg.

Dr. WILLIAM ALEXANDER, Visiting Surgeon to the Liverpool Workhouse Hospital, contributes to the *Medical Examiner* (May 3 and 10) an interesting communication on this subject, and from it we make the following extract:—

The treatment naturally divides itself into constitutional, mechanical, and topical. All our patients were in fair health, and were subject to no organic disease. The urine, lungs, and heart were examined in every case, and if there were any symptoms indicating mischief, or if serious disease was found, the patients were transferred to other wards. The diet in all was similar, sufficient, and unstimulating; medicine was rarely given; so that we may dismiss constitutional treatment with the remark that when necessary it is most important, but that it is most difficult to tell when a patient is in good general health, as far as an ulcer is concerned, as very often the strong and apparently healthy are more difficult to cure than the delicate and apparently unhealthy. I think in such cases the constitution has little to do with the treatment, but that the slow cicatrization depends to a great extent on the mechanical derangement of the limb. This brings us to the second and most important mode of treatment, the *mechanical*. It is to the perfecting of this that we believe the attention of surgeons must be directed in future; but we will dismiss *it* also for the present, as it was used, in addition to the topical treatment, in all cases in which it was considered suitable or necessary, and does not invalidate, or to a very slight extent, the result of our experiments on the relative effects of topical applications. *Strapping* by means of soap plaster is the simplest mechanical means we have used by itself, and it is the grand remedy for indolent ulcers which are not spreading in a fleshy leg that possesses a moderate amount of vitality. The test of success in any remedy was that the ulcer became healthy or kept healthy, and continued healing until the patient was either discharged cured or at his own request. As soon as the sore became stationary or retrograded the lotion was changed. The following table will show at a glance the results of our experiments according to this test:—

	Boracic ointment.	Chloral lotion, gr. iv–3j.	Chloride of zinc, lotion, gr. ½ to 3j.	Sulphate of zinc, lotion, gr. ij.–3j.	Lotio boro-salicylic, 2 per cent. solution.	Spirit lotion.
Cases in which used . .	40	89	30	11	25	31
Successful	21	35	13	1	9	14

	Lotio ferri, 3j–3x.	Seton in addition to treatment.	Lotio plumbi cum opio.	Water dressing.	Carbolic acid oil, etc.	Chapman's dressing.
Cases in which used . .	11	11	11	2	15	6
Successful	8 (3a)	5	8	2	5	2

	Lotio antiphlogistica.	Antiseptic dressing, lac and spray.	Electrolysis.	Specific treatment.	Grafting.	Soap strapping.
Cases in which used . .	11	11	9	21	11	27
Successful	5	2	1	20	2	17

Caustics were used in several cases, but only for destroying sloughs, the ulcers being treated afterwards by some of the above-mentioned lotions.

I will now explain the indications for the use of each of the lotions which I have mentioned in my preceding remarks.

Boracic ointment is made, after Mr. Lister's formula, of one part boracic acid, one part white wax, two parts paraffin, and two parts almond oil, modified and softened by a little glycerine, as recommended by Dr. Macfie Campbell. This is the only unctuous application in which we have any confidence, a trial of some others having proved their inferiority to lotions. Boracic ointment is most useful in slowly-healing ulcers; it keeps them clean and healthy-looking for any length of time.

Chloral lotion has two distinct properties, cleansing and healing, the former being its pre-eminent one. In eighty-nine cases its healing qualities were not properly tested, as it was and is extensively used by us to all ulcers on admission preparatory to the application of other lotions which are used when the sore is clean; so that many more than thirty-five would have healed to the end had the lotion been continued. If I were asked to name the most generally useful lotion that would save all trouble to the surgeon and secure a comparatively good result, I would at once name chloral lotion. In a healthy sore, where there is no mechanical obstruction to cicatrization, the lotion most rapid in producing the desired effect is *chloride of zinc;* the sulphate appears to be much inferior. Much caution is required in the use of these two applications, lest over-stimulation and sloughing, or re-ulceration should result. In superficial ulcers the rapid effect of the chloride is very little superior to our next application, *lotio borosalycilica.* This was first introduced with the object of checking a profuse discharge of pus from a chronic abscess. Langenbeck having used it for that purpose in a case of excision of the larynx. It does not seem to me to have much value in that direction, but it is very useful in superficial ulcers.

The old *spirit lotion* still holds its ground as a most useful application to healthy wounds; and *lotio ferri* can be highly recommended in pale anæmic ulcers with their watery discharge in unhealthy anæmic individuals.

In eleven cases of obstinate resistance to treatment in long-standing ulcers, a *seton* was inserted near the tubercle of the tibia, with the object of securing the accustomed "drain for the body." In five cases it was useful; but the theory is incorrect, as the body does not require the drain. We have never seen bad effects from stopping it when we could, and in many of the cases that resisted the seton, we found afterwards, from the effect of more suitable treatment, that the cause was quite different.

Lead and opium lotion holds an enviable position in clean but irritable ulcers, with a deep-red and painful state of the integument around. This seems to be its special niche, as it nearly always leads to disappointment when used in other varieties of ulcer.

Water-dressing was used only in two cases. It may do very well in private practice, but is a dangerous remedy where many ulcers are congregated. On this ground it was given up.

We now come to *carbolic acid,* either as a lotion or mixed with olive oil. I look upon it as our greatest safeguard and sheet-anchor in hospital practice, and especially in *workhouse hospitals.* If pyæmia, erysipelas, or phagedæna threaten, to carbolic acid we resort at once; and I think it is an almost conclusive proof of its efficacy in preventing these scourges of hospital wards that in our hospital, where patients are admitted with every possible grade of unhealthy, dirty, and sloughing sores, only two cases have as yet been attacked with erysipelas after operation. Pyæmia, also, after operation is almost unknown; and I think that the prevention of such diseases shows the great practical use of this acid; but its efficacy in healing chronic ulcers is much inferior to many other of the remedies employed. It will keep the ulcers clean and sweet for almost any length of time; but they will not heal, and at length assume a soft, light-red, parboiled appearance, which they retain.

Chapman's treatment by bandages, dipped in water in which a little glycerine is added, was tried in six cases. Two of these healed uninterruptedly;

but in the others the result was so unsatisfactory that no further trial was made. I believe it to be most useful in small, irritable ulcers, for which I intend to try it in future.

What I have called "*antiphlogistic lotion*" is one proposed by Mr. Hutchinson, composed of acetate of lead ʒiv, ac. acet. dil. ʒij ℈ij, and rectified spirit ʒviij. Five out of eleven cases healed under its influence. These legs generally exhibited numerous small ulcers, with the skin around in an unstable condition. The skin was strengthened, and the ulcers soon became glazed over and assumed a reddish-brown tint, quite peculiar to this treatment.

Antiseptic dressing consisted in steeping and thoroughly washing the ulcer in carbolic acid, strapping it with several layers of lac and cotton-wool, and applying a firm bandage from toes to knee, the limb being enveloped during the operation in a cloud of carbolic-acid spray. It produced a permanently good result only in two cases. After the first few applications the sore looks healthy, the beautiful thin cicatricial line can be seen creeping inwards, but in a short time the healing process is at a stand-still, and the re-ulceration begins either in the surrounding skin or in the cicatrix. If the lotion is changed while the sore is healing, cessation of the process immediately takes place, the cicatrix resembling a "forced" plant that will not live in the open air.

Electrolysis and *grafting* may be classed together as different methods of *forcing* cicatrization. In healthy granulation surfaces, where everything is favourable, cicatrization may be much hastened and facilitated thereby, but in chronic ulcers electrolysis resembles the application of the spur to an exhausted horse, and grafting is to the ulcer what over-feeding is to an exhausted stomach. Only one case healed after electrolysis and two after grafting, out of nine and eleven cases respectively. Latterly I have grafted ulcers with the thin and almost hairless skin from the inside of rabbits' ears, and with as good a result as with human skin, though not with such a good result as would induce me any longer either to sacrifice rabbits or to undertake such troublesome methods of treatment. During my later experiments in grafting, I covered the grafts with a fine piece of iron wire gauze, surrounded by oakum. The discharge from the sore was absorbed by the oakum, which could be changed without disturbing either the gauze or the grafts. More recently still I have used pieces of gauze alone without any grafts. They are applied for two or three days, when the ulcer becomes thoroughly cleansed, and the appropriate treatment for bringing about cicatrization is then adopted. I believe that the effects are as good as those of electrolysis or grafting, as far as regards the increase in the vitality of the sore, although there is an absence of the scientific display and the operative manipulation by which the latter methods are distinguished, and which cause the ulcer to have a very dirty appearance.

I have already alluded to the importance of mechanical appliances in the treatment of ulcers, and I wish now to mention a few situations where mechanical forces prevent cicatrization.

1. In small ulcers, having a longitudinal direction, upon the sharp anterior border of the tibia in its middle third, the muscular mass of the calf drags upon their edges, and either prevents cicatrization or breaks up the cicatrix before it is strong enough to resist the tension. A well-padded back splint, to which a foot-piece is added, and to which the leg is firmly strapped, secures a good result.

2. A depressed concave ulcer on the inner side of the calf, just above the spot where the muscular tissue joins the tendo Achillis. In such cases the calf is unusually prominent. Soap strapping for a considerable period is the most effectual application.

3. A strap-shaped ulcer above the ankle, with infiltration and atrophy of the subcutaneous cellular tissue, the leg being of the same diameter for three to four inches above the malleoli, when it suddenly enlarges into the calf. The cicatrix moves with every movement of the tendons, and requires a long time and many fresh ulcerations before it so accommodates itself to the necessary movements of the part as to be no longer injured.

4. Ulcers on the malleoli require rest, soothing lotions, and much patience for their treatment.

5. Ulcers on what might be called the "bursting leg," where the skin is tense, but not glazed or red. The ulcers are small, often numerous, and usually occur in young, strong, healthy persons, and are mostly associated with hypertrophy of the tibia.

In conclusion, I believe I am justified in laying down the following propositions regarding chronic ulcers of the leg:—

1. That an ulcer on a comparatively healthy leg will be healed by every mode of treatment that secures cleanliness, and that does not interfere with the healing process.

2. That in the majority of cases the causes preventing cicatrization are mechanical, and can be best treated by removing or counteracting these obstacles, and that until this is done any benefit to be derived from topical applications will be but temporary and evanescent.

3. That large ulcers of the leg require a certain time to cicatrize; that periods of rest in the process are necessary for the maturing and contraction of each fresh piece of a cicatrix, and that we ought to devote more attention to the signs that will indicate whether an indolent ulcer should be stimulated, or whether the apparent indolence is only a rest, as necessary for its future exertions as our daily sleep is to us.

4. That we must shun the over-use of wet applications; the lotion should be applied to the ulcer *alone*, and the surrounding skin should be kept as dry as possible.

5. That where wet applications are resented by the skin or ulcer, oxide of zinc powder dredged over the limb is most useful; and where the ulcer is healing, but the surrounding skin unstable, the zinc lotion to the ulcer and the powder to the skin, have seemed to me the most appropriate treatment.

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Two Cases of Cirsoid Aneurism treated by the Continuous Galvanic Current.

Although cases of this remarkable disorder are not so infrequent but that a considerable number have been recorded, yet it must be allowed by all that its pathology continues very obscure and has yet to be worked out. Perhaps the most plausible hypothesis is that the irregular varicose arterial dilatations are consequences of a chronic creeping arteritis, inducing atrophy of the arterial walls, which, being thinned, are no longer able to support the blood-pressure upon their inner surfaces, and thus become dilated. Although in many of the recorded examples the subjects have been persons in advanced years, their histories nearly always show that the disorder had lasted several years, and that it had begun before the decline of life. In the two cases now published the patients were both young adults. Often the origin is referred to an injury. In the young woman it was interesting to observe how the dilatation spread backwards along the anterior branch of the superficial temporal to the trunk itself, and how when the aneurismal knot was obstructed this dilatation gradually disappeared, until the vessel could hardly be felt, and this without any extension along it of the thrombus from the varix, for at no time during the shrinking was any hard or cord-like state of the vessel, such as there would have been, had it been plugged, perceptible. At the present moment the solidified cirsoid knot has shrunken so much that only a trace of it can be felt upon very close examination. It is to be regretted that the obstinate stupidity of the man prevented a similar good result from being obtained.

Case 1.—M. C., a *petite brunette* dressmaker, was admitted into Regent ward on March 22d last, having under the right eyebrow, encroaching on the upper eyelid, a soft, compressible, rhythmically pulsating swelling, of the size of half a walnut. The pulsation was attended with a continuous murmur. The anterior branches of the superficial temporal artery were much dilated, and the trunk of this vessel was so enlarged that where it crossed the zygoma it projected visibly in strong relief. The swelling seemed to be connected with an inosculation between the temporal artery and the supra-orbital branch of the ophthalmic artery, but chiefly with the former, since compression of the temporal artery nearly stopped the pulsation, whilst pressure on the supra-orbital was less effective. The simultaneous compression of both these vessels wholly

arrested pulsation and murmur. She had previously been seen by Mr. Hulke six years before, when the swelling was not larger than a currant, and then declined to submit to any treatment. Subsequently, she said, she entered a metropolitan hospital, where her resolution was confirmed, and any direct interference condemned. The growth of the tumour at length alarmed her, and she was willing to submit to whatever may be advised. It was decided to try compression of the feeding vessels first, and a compressor, acting on the temporal artery at the zygoma, and also against the upper orbital margin upon the supra-orbital branch, was constructed and perseveringly worn till June, without, however, any beneficial effect on the swelling, except during the time it was actually on. June 14: Galvano-puncture. The swelling became firmer, but pulsation was not wholly arrested. July 1: Galvano-puncture repeated. On both occasions the blood-current was arrested by pressure on the vessels at each side of the swelling. This was followed by increased firmness and diminution of the pulsation, which wholly ceased on the 3d. On the 10th the swelling had very evidently shrunken and was quite hard. The dilatation of the temporal artery had greatly decreased, but this vessel is soft, and certainly not plugged. August 3: Only a trace of the knot remains. The temporal artery and its anterior branches are as small as, or perhaps less than, those of the other side.

Case 2.—J. D., aged twenty-eight, a hammerman, of rather small but sinewy figure, was admitted on May 20 last into Forbes ward, with very extensive cirsoid disorder of the arteries of the scalp. Behind both ears are large, prominent, visibly pulsating swellings, reaching from the mastoid region inwards, and blending across the middle line. Above, they thin out insensibly, on the right side being continued forwards and inosculating with varicose posterior branches of the superficial temporal artery. Below, they reach downwards to the meeting of occiput and nape. From the lower margin of the mass on each side the extremely dilated trunk of the occipital artery passes downward under cover of the mastoid process; and here compression of it upwards against the skull greatly reduces, in fact almost stops, the pulsation of the masses above. The whole tree of the superficial temporal artery on each side is enlarged, especially the posterior branches, and in particular those of the right side. The pulsation is rhythmical, it slightly precedes the wrist-pulse, and is accompanied by a continuous loud, rough murmur. Beneath the pulsating occipital masses the surface of the skull (when the masses are emptied of their contents by pressure) feels irregular, as if from outgrowths of bone, but these are apparently not in structural connection with the vascular tissue. The whirring noise greatly distresses him, and he has severe headaches, increased by any exertion, which he describes "as if the roof of my head was being lifted quite off." He had a feeble, rather slow pulse (56 per minute), and he was dyspeptic; his temperature 97.6° Fahr. His head was shaved, and covered with a large ice-bag, the dilated vessels being equally and uniformly compressed with a double-headed roller. He soon pulled off the roller, declaring that it increased his discomfort. On August 15, his general condition having improved, and his headaches being less, galvano-puncture was tried upon the right occipital swelling. Some solidification was obtained, especially about the needle connected with the negative pole, but, the skin traversed by the needle becoming gray, it was deemed prudent not to continue the current, and the needles were withdrawn. Next day the upper part of the swelling was very tender, and the branches passing forwards to the temporal artery were evidently plugged. Slight inflammation of these vessels ensued, followed by their shrinking and obliteration. The principal mass was also evidently in process of cure. Small, superficial, circular eschars fell off at the needle-holes, drying up and leaving the cutis already cicatrized at the time of their exfoliation. At the end of June had a rather obstinate diarrhœa, and once he spat a little blood. His lungs were found to be slightly emphysematous, and the heart's first sound a little rough. He obstinately refused to submit to any further treatment, and insisted upon having his discharge. His manner whilst in the hospital had always been odd, and it was said that he had been in a lunatic asylum.—*Med. Times and Gaz.*, June 9, 1877.

The Cure of Popliteal Aneurism by Esmarch's Bandage.

Mr. THOMAS SMITH, Surgeon to St. Bartholomew's Hospital reports (*Lancet*, May 26, 1877), the following case:—

R. F——, aged forty-five, a bonnet-blocker from Luton, was admitted into Henry ward under Mr. Thomas Smith's care on March 7th, 1877, with an aneurism in the right popliteal space about the size of a hen's egg. The patient, a spare, healthy man, noticed the swelling three weeks since. He says it came of itself, and when first observed was about the size of a walnut. It has gradually increased, and is increasing in dimensions pretty rapidly. The aneurism pulsates very forcibly; the circulation can easily be controlled by pressure on the femoral, but flexion of the limb does not arrest the flow of blood through the sac. The patient complains of severe pain, especially at night, and in the recumbent position. Family history good; no personal history of syphilis; first sound of heart has a blowing character; urine healthy.

A few days' rest in bed diminished the tension of the aneurism, and relieved the patient's pain considerably.

On March 17th, at 3 P. M., the treatment was commenced. The limb was rolled in a flannel bandage from the toes to the lower part of the popliteal space, and again from above the aneurism to the groin. Esmarch's India-rubber bandage was then applied, with only moderate firmness, from the toes to the aneurism, the patient being in bed; he was then made to stand up until the sac was well filled with blood, when the elastic bandage was applied from above the aneurism to the groin, where the limb was surrounded with the thick India-rubber tubing so as completely to arrest the circulation in the limb. The aneurism and popliteal space were thus left exposed, so that the least pulsation in the sac could be detected. In this way the circulation was stopped for one hour, during the last half of which chloroform was used on account of the pain. At the end of the hour, while the patient was still under chloroform, Esmarch's bandage was removed, and the Italian tourniquet was applied to the femoral, and maintained in position for two hours. At the end of the first hour of the tourniquet pressure, the patient began to complain of intense pain, and shivered a good deal, feeling, as he expressed it, "thoroughly cold." At 6 10 P. M., when three hours had elapsed, the tourniquet was removed on account of the intense pain, the patient refusing to take any more chloroform, and being unable to bear the pain. The aneurism was found to be solid, and about half the size it had been at the commencement of the treatment. Towards night the patient complained of pain in the limb, and his temperature rose to 100.2°. Next morning he was still suffering from the effects of the chloroform, but had lost all pain in the limb, and in other respects was quite well. He was discharged from the hospital on April 6th, with the aneurism cured.

This case I believe to be of interest as adding to our knowledge of a method of treatment concerning which we need further experience before we can assign to it its proper function in the cure of aneurism. We are as yet ignorant of the precise details that may be advisable to adopt in carrying out this plan, and we do not yet know to what cases it may be best suited.

There can be no question that by Esmarch's bandage we can maintain a complete and continuous arrest of the circulation in a limb; an arrest that is not liable to interruption by the movements of the patient or the want of skill in his attendants—contingencies that are inseparable from the employment of a tourniquet.

Esmarch's bandage may thus be regarded as the most perfect means we at present possess of carrying out in certain localities the principles of Dr. Murray's rapid treatment of aneurism by pressure. It has been employed successfully by Dr. Reid,[1] Mr. Wagstaffe,[2] Mr. F. A. Heath,[3] Mr. T. Wright,[4] and unsuccessfully by Mr. Bradley.[5] It is likely that many others have applied

[1] The Lancet, 1875, Sept. 25.
[2] The Lancet, 1876, vol. ii. p. 461.
[3] British Medical Journal, 1876, p. 570.
[4] The Lancet, 1877, vol. i. p. 163.
[5] British Medical Journal, 1876, p. 171.

this treatment to the cure of aneurisms, though, perhaps, with indifferent success, since it is probable that mostly the cures have been published.

My own experience of this method of treatment consists of three attempts to cure popliteal aneurism, two being on the same patient, and on both occasions I was unsuccessful. The first failure, as I believe, was chiefly due to my having nearly emptied the aneurism of blood by pressure on the sac, and in the second attempt I could not be sure that the circulation in the sac was completely arrested, as I had covered the part with a bandage. In addition to these errors in the application of the treatment, I am now convinced that the arrest of the circulation was not maintained for a sufficient time to give the blood in the sac a fair chance of coagulating, even if other circumstances had been favourable to this process, which they were not.

In Mr. Bradley's unsuccessful case, he also made two attempts on the same patient to cure popliteal aneurism. His method of applying the treatment seems to have been essentially the same as was employed with success by myself and others.

As regards the plan pursued in the cases cured by Esmarch's bandage, the following is a short summary of the chief points of interest.

In all, the aneurism was of the popliteal artery. In all but one case—Mr. Wright's—the treatment was commenced by completely arresting the circulation in the limb for *one hour* by means of Esmarch's bandage, pressure being kept up after this time by means of a tourniquet. The tourniquet pressure was maintained in Reid's case for twelve hours; in Wagstaffe's for seven hours and a half; in Heath's case for five hours; in my own case for two hours; in Mr. T. Wright's case Esmarch's bandage was kept on for two hours and a quarter, and at the end of this time pressure was kept up with more or less completeness for five days by means of a shot-bag. As to the time occupied in the cure, pulsation in the aneurism was known to have ceased at the end of fifty minutes in Mr. Reid's case; in two hours in Wagstaffe's case; in one hour in Heath's case; in three hours in my own; and in twenty-four hours in Wright's case. In this last case the pulsation returned to some extent after being absent for a few hours.

It is probable that coagulation of the blood in the sac may have occurred in these cases before the fact was ascertained by observing the absence of pulsation; in my own case, at the end of one hour from the commencement of the treatment, when the bandage was being changed for the tourniquet, it was observed that the coagulation had not taken place, while at the end of two hours from this time the sac had ceased to pulsate; but during these two hours the condition of the blood in the aneurism could not be ascertained, as the pressure on the femoral was rigorously maintained. It was observed, however, that at the end of two hours from the commencement of the treatment the patient complained of very severe pain, and was attacked by shivering. At this time, I believe, the coagulation in the sac occurred.

With reference to the manner in which the pressure was applied, it is to be noticed that in Wagstaffe's and Heath's cases the elastic bandage was applied to the whole limb—with moderate firmness below the aneurism, loosely over the sac, and tightly above the sac; no elastic ligature was used at the groin. In Mr. Wright's case and my own, in addition to the elastic bandage to the whole limb, excepting over the sac, the elastic ligature was used below the groin. In Dr. Reid's case an elastic ligature was used below the groin, and no elastic bandage was employed to the limb. In Mr. Bradley's case and my own the aneurism was left quite exposed, so that its condition could be freely examined as regards pulsation and solidity. In three of the cases recorded, during the continuance of the treatment and probably at or soon after the occurrence of coagulation in the sac, a small artery was noticed to be pulsating vigorously over the aneurism. In all the successful cases the bandage was so applied that the sac was filled with blood at the time the circulation in the limb was arrested.

From the consideration of these cases, it seems that the conditions to be observed as most favourable to success are the following, namely, that the circulation in the limb should be for a time completely arrested, that the aneu-

rismal sac should be full of blood, and that the circulation in the aneurism should be stopped for a sufficient time to allow the blood to coagulate.

For how long a time it may be prudent to exclude the blood from the entire limb by the Esmarch bandage, and when the more local effect of the tourniquet should be substituted for the Esmarch bandage, is a matter for further investigation. It is, however, probable, from the experience of long operations for necrosis performed under the Esmarch bandage, that we have not yet reached the limits of safety as regards the time during which the bandage may remain on the limb. One would suppose—though I dare say without sufficient grounds—that it would always be prudent to empty the arteries of the limb by the application of the elastic bandage before adjusting the elastic ligature above.

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Transfusion in a Young Girl.

Dr. STRAPART relates (*Révue Méd.*, March 26) the case of a girl, thirteen years of age, who was admitted to the Hôtel Dieu, at Rheims, on account of uterine hemorrhage. She was a strong and well-developed girl, and between July and October had menstruated three times. On this last occasion menstruation became profuse, and, having continued so for three weeks, she was brought to the hospital on November 23. She was then excessively pale and exhausted, her pulse being rapid and filiform, the hemorrhage issuing as an oozing, and clots being occasionally discharged. Under the use of ice, ergotine, quinine, with perchloride of iron and cold enemata, she improved, and continued doing so until December 13, the bleeding diminishing considerably. On the 14th and two following days the hemorrhage returned with violence, and was accompanied by very frequent vomiting, and by the 17th the patient's condition seemed desperate, she being pulseless and almost unconscious. Transfusion was at once resolved on, the girl's father supplying the blood. Of non-defibrinated blood 120 grammes were injected by Mathieu's apparatus. In proportion as the blood flowed in, the girl felt a vivid sense of warmth pervade her entire frame. This soon after was followed by shivering and thirst that nothing seemed capable of appeasing. The pupils, which prior to the operation had been dilated, were two hours afterwards considerably contracted, and continued so for four or five hours. Wine and a little broth were prescribed. The night was sleepless, and there was frequent nausea, but no vomiting. On the 18th the pulse was 145, and the thirst still continued excessive. Some sleep was procured at night. On the 19th the pulse was 135, with a little more power, the cheeks also regaining some colour. The temperature was 38° C.

Without pursuing the case further in detail, it may be stated that the patient gradually, but slowly, improved, although her temperature rose to 39°. A month after the transfusion she began to leave her bed, and on January 28 left the hospital in a satisfactory condition, the pulse, although still rapid, being regular, and the cardiac *souffle* less distinct. Scarcely any hemorrhage had occurred since the transfusion. Her treatment had consisted in tonics, iron, and Malaga wine. The phenomena observed in her case were due to advanced chlorosis, and the red globules, which prior to the transfusion could easily be counted on the field of the microscope widely separated from each other were afterwards considerably increased in number. The irrestrainable vomiting formed an important feature in the case, and an additional indication for adopting transfusion. It may be questioned whether so prompt an effect would have been produced if defibrinated blood had been employed.—*Med. Times and Gazette*, May 5, 1877.

Midwifery and Gynæcology.

On some of the Relations of the Fœtal Head to Rupture of the Perineum and Injuries of the External Genital Organs.

In an interesting communication to the Obstetrical Society of Edinburgh, Dr. MATTHEWS DUNCAN said: While the passage of the fœtal head through an ordinary contracted pelvic brim has been carefully studied, and many of the mutual influences well made out, the same cannot be said of the passage of the fœtal head through the vaginal and then through the vulvar orifice. In important respects the former passage is an easier and simpler subject of study than the latter, and there is in consequence a contrast between them. The passage through the brim is the forcing of the globose head through a passage contracted at one part. The passage through the vaginal and vulvar orifices is through an obstruction which is circular, or nearly so, and acts at every part. The passage through the brim is therefore a matter affecting one diameter of the fœtal head, or a single series of diameters of nearly the same name, extending in a nearly vertical line from above downwards on the fœtal head. The passage through the vaginal and vulvar orifices affects a circumference or circumferences of the head, embraced, as it is, all around by the opposing undilatable margins of the orifices. In the passage through the brim, the head has to suffer and be moulded, while the resisting parts are practically unyielding, and may be regarded as unaffected In the passage through the vaginal and vulvar orifices the head has to suffer to some extent, and be moulded slightly, but the resisting parts are much more moulded, and must yield or be lacerated.

The passage of the fœtal head through a generally contracted pelvic brim has more likeness to the passage through the vaginal and vulvar orifices than has the passage through an ordinary contraction affecting the conjugate diameter chiefly. In both of the former cases the whole circle of the aperture, or nearly the whole, resists the advance of the head. In both, and for nearly the same reasons, the head advances or is forced onwards in that way in which it passes most easily; that is, with one end of the long diameter of the oval head coming first; or, with the posterior triangular fontanelle, or some part near it, forming the presenting point.

The fœtal head does not come through the vaginal and vulvar orifices simply or exactly in the line of direction of its long axis. That is prevented by the connection with it of the neck, which forbids the amount of flexion-like movement that might occur if the neck and body were imagined to be absent. Besides, in consequence of the presence of the neck of the fœtus, and from the construction of the passage, the head follows the line of the so-called circle of Carus; not a straight course, even at its moment of emergence from the genital canal. With its suboccipital region pressed against the middle of the pelvic arch, and advancing slowly, wheeling around a point somewhere about the centre of the symphysis pubis, the region of its vertex is advancing rapidly in a larger circle, wheeling around the same point, and distending the perineum to its utmost.

With regard to the mechanism of distension, the following diameters have chiefly to be considered; the suboccipito-vertical, the suboccipito-bregmatic, and the suboccipito-frontal. The suboccipito-vertical diameter passes through the plane of the parietal tuberosities, and reaches the sagittal suture about ¾ inch behind the centre of the anterior fontenelle; it measures about 3½ inches; and its corresponding circumference passing over the parietal tuberosities measures about 11¼ inches. The suboccipito-bregmatic diameter passes from the suboccipital region at a point a little nearer the nucha than the former, and reaches the middle of the anterior fontenelle in a line joining the limbs of the coronal suture; it measures about 4 inches, and its corresponding circumference measures about 12½ inches. The suboccipito-frontal diameter passes from the suboccipital region at a point a little nearer the nucha than the former, and reaches the most prominent part of the forehead at the frontal suture, about an

inch in front of the centre of the anterior fontanelle or the middle point of a line joining the limbs of the coronal suture; it measures 4¼ inches, and its corresponding circumference is about 12¾ inches. These various figures are not taken from a sufficiently large number of newly-born children to give them value as averages, but their value, when used in comparison one with another, is evident. They may be given in a tabular form thus—

Suboccipito-vertical diameter	3½	inches, in circumference,		11¼	inches.
Suboccipito-bergmatic	" 4	"	"	12½	"
Suboccipito-frontal	" 4¼	"	"	12¾	"

Every practitioner supporting the perineum during the birth of the head must frequently have observed that it has retained its entirety until the projecting forehead came on, and this lacerated it. Now, this is easily explained by the above table of measurements, for it is not till the suboccipito-frontal diameter is passing that the perineum is stretched to the utmost. The suboccipito-vertical and suboccipito-bregmatic diameters may both pass over the perineum without tearing it, and then the large suboccipito-frontal may lacerate it on account of its greater dimensions. No doubt the suboccipito-bregmatic or the suboccipito-vertical diameter may tear the perineum, or even an earlier passing part; and in this case the tear may be extended and extended, as each larger part follows, till the largest suboccipito-frontal emerges, completing the injury done.

The order in which all the lacerations of the external genital organs take place I cannot decide, but the following statements are either self-evident or nearly certain.

Before the suboccipito-vertical diameter has passed the vaginal opening, or even when only a caput succedaneum protrudes, the vaginal orifice is lacerated posteriorly. The laceration increases as the head advances.

While the parietal protuberances pass through the vaginal and vulvar orifices, they may lacerate one or both sides of the vaginal orifice or of the vulvar orifice.

The vestibular lacerations take place before the suboccipito-frontal diameter has passed the vulvar orifice. Their occurrence helps to save the perineum from laceration.

A laceration of the fourchette may take place early in the passage of the head.

An extensive laceration of the perineum (say three-fourths of an inch or more) obviates tension of the vaginal and vulvar orifices, and therefore prevents further laceration after its occurrence.

The perineum is the part last lacerated.

Cases of ordinary or characteristic central perineal rupture, in which the head advances in its natural way, and is born through the vaginal and vulvar orifices, and, still better, cases of incomplete central rupture, such as I have recorded in a former paper, require special consideration. They show nearly with certainty that the anterior part of the perineum is in some cases, including themselves, considerably more extensible than its middle or posterior part; for in them the anterior part or a portion of it (it may not be the most anterior part or fourchette) remains entire, while the suboccipito-frontal diameter passes over it, and after the middle of the perineum has given way under the distension by the same diameter of the fœtal head.

In the cases of complete central rupture which I have seen there were two perineral ruptures; first, of course, the central rupture; and, second, an ordinary rupture of the fourchette or anterior part of the perineum. Between them, in the most characteristic cases, but not in every instance, there is an entire strap or bridge of skin unhurt. No doubt the unhurt bridge or isthmus of skin may, in some cases, be absent, and the two distinct ruptures be confused in one. Whether this be the case or not, it is to be remarked that both tears may go on simultaneously, and so rapidly that the observer may be unable to distinguish their separate occurrence. While the suboccipito-vertical or even a smaller circumference is distending, and, it may be, tearing the vaginal and vulvar orifices, the hitherto entire middle of the perineum may be at the same time suffering central rupture by the great advancing suboccipito-frontal cir-

cumference. The middle of the perineum may have endured dilatation by the suboccipito-vertical and suboccipito-bregmatic circumferences which have advanced to lacerate the vaginal and vulvar orifices, but cannot endure further distension by the suboccipito-frontal, which therefore tears it, and may yet pass over some of the anterior part of the perineum without destroying such anterior part.

Having discussed the injuries of the perineum produced by the passing fœtal head, we have now to devote attention to the injuries of the fœtal head, caused by the resisting perineum; for it may be held as quite certain that every obstacle or modification of resistance to the advancing head leaves its mark upon it. In the case of difficult passage through the pelvic brim, the changes or injuries are often well-marked, and have been carefully studied, with great advantage to the progress of obstetrical science. But the vaginal and vulvar orifices and the perineum also do in like manner produce their peculiar capita succedanea, equitations of bones and shears; and they demand more careful study than has yet been accorded to them. In the mean time I can only enter upon some general views.

The caput succedaneum of the vulvar orifice, or of the end of the second stage of labour, I have already elsewhere described.[1] That the perineum and vaginal and vulvar orifices may by their undilatability lead to equitation of bones there is no doubt, but I have not studied the subject so as to enable me to describe any peculiarity in such overlapping. In regard to the shear produced by the forcing of the head over a perineum, and through a vaginal and vulvar orifice difficult of dilatation, it may be stated that the lateral or antero-posterior part of the ordinary shear[2] is in great measure due to the resistance of these parts.

The mortality of male children in birth, and shortly after it, is greater than that of females. Males more frequently demand artificial assistance in delivery than females. There is no doubt that both these evil conditions are in part owing to the greater size of the male head, and the consequent need of more dilatability and more actual distension of the perineum and vaginal and vulvar orifices than is required by females, circumstances which imply greater injury of the fœtal heads of males.

It has been shown that the part of the fœtal head which most distends the perineum and vaginal and vulvar orifices is that generally called the suboccipito-bregmatic diameter or circumference (including the suboccipito-vertical, suboccipito-bregmatic, and suboccipito-frontal diameters or circumferences of this paper). Hence it should be expected that the suboccipito-bregmatic diameter should show evidence of special compression, and this has been admirably done by Budin.[3] His measurements were made to show the amount of resilition gradually effected within about two days after delivery, giving thus a satisfactory indication of the amount of compression during birth. "The augmentation (says he) of the suboccipito-bregmatic diameter has been constant (in all his fifty-two cases measured); this augmentation has been almost always very considerable, and has amounted even to twelve mms. The suboccipito-bregmatic diameter is, in fact, that which increases the most after delivery."

In accordance with what has been stated in this paper regarding the suboccipito-frontal diameter or circumference I have no special measurements to adduce in evidence, but I dare say every one will be prepared to believe in its particular diminution during labour, for the lowness of the forehead in a much-compressed head is well known to accoucheurs, and is often a horrid sight to the parents ignorant of its temporary character. But in regard to the suboccipito-vertical diameter or circumference, I have valuable measurements by Budin to adduce, whose evidence quite supports the line of demonstration pursued in this paper. As already stated, the parietal protuberances are embraced in the suboccipito-vertical circumference, and Budin's measurements indicate the

[1] Contributions to the Mechanism of Natural and Morbid Parturition, etc., 1875, p. 235.

[2] Ibid., p. 216.

[3] De la Tête du Fœtus au point de vue de l'Obstétrique. Paris, 1876, p. 67.

amount of diminution of the biparietal diameter, which is one measure of the sub-occipito-vertical circumference. Budin describes, and his measurements show the bitemporal diameter, which corresponds to the suboccipito-bregmatic proper, more diminished during labour than the biparietal. Or, to use his own words, "The biparietal diameter also augments after delivery, but this augmentation is not constant; it is by much the least considerable; in fifty-two cases, two times only has it amounted to five mms., once to six, and once to seven mms."

If the argument of this paper is correct, then there should be a great difference between the fœtal heads of primiparæ and those of multiparæ. The greater injuries of the perineum and external genital organs in primiparæ than in multiparæ should be correspondingly reflected in the heads of the fœtuses born in primiparæ and in multiparæ. And so it is. The mortality in birth, and shortly after it, of children born of primiparæ, is greater than of children born of multiparæ. The heads of the children of primiparæ are more deformed by labour than those of the multiparæ. Budin, our best authority on this point, writes as follows:[1] "That this resistance of the soft parts—and Prof. Depaul, following M. Dubois, insists strongly on this point—that this resistance of the soft parts causes, during labour in primiparæ, a longer duration of the period of expulsion, is a fact about which there can be no doubt. From it there results also a more marked deformation of the head. The figures which we have given, and which show considerable modifications in the form of the cranium, are all the consequence of deliveries in primiparæ. In multiparæ, on the contrary, the deformations are much less remarkable, and often are almost absent."

Here I must draw to a close, with the remark that the subject is well worthy of further elucidation and description. Of two sets of facts I feel special want—namely, a statement of the actually observed injuries produced by the birth of males, as compared with those produced by the birth of females; and a statement showing comparatively the injuries produced in head-last cases and head-first cases. The matter is one not of so easy solution as it may at first sight seem, for mere great number of injuries may be made up for by severity in the smaller number. One serious laceration may be more important than several small ones. Besides, one deep laceration may act as a preventive of several smaller.

Dr. Underhill remarked that two important points were brought out most distinctly in Dr. Duncan's first paper; first, that in primiparæ the fourchette frequently escaped laceration—indeed, it escaped in about half of Dr. Duncan's cases. This was contrary to what is commonly taught in text-books and elsewhere, and served, he thought, to confute the argument of Dr. Keiller and Dr. Milne, that the large number of lacerations reported were due to officious interference on the part of house-surgeons or nurses; for less than was to be expected of ordinary perineal tears, such as are usually the only ones looked for, were found. Secondly, the great number of lacerations of other parts of the vulvo-vaginal opening; he was not prepared to find these so numerous and so extensive—in fact, hardly one of Dr. Duncan's cases had escaped without tearing of some part or other of the orifice. He (Dr. Underhill) thought partial central ruptures, involving the vaginal mucous membrane, but not reaching to the skin, were not at all uncommon, even when the fourchette remained entire. As regards the paper read to-day, he looked upon it as one of great value, and was much struck by the way in which the observations and measurements of Drs. Duncan and Budin, begun with different objects and from different points of view, fitted into and were complementary of one another; together they formed a very valuable contribution to the mechanism of labour.

Dr. Macdonald thought these tears of a minor degree quite as common in private practice as in hospital, but he feared that the true explanation of the apparent discrepancy was that they were often overlooked in the case of the private patient. Though he had never had an opportunity of seeing complete central rupture, he could bear out Dr. Duncan in his statement regarding the occurrence of those tears beginning posteriorly and traversing the perineal

[1] De la Tête du Fœtus au point de vue de l'Obstétrique. Paris, 1876, p. 70.

tissues down to the skin, but not coming through it. Cases of that kind had frequently occurred in his experience. He thought that, during delivery, tears often occurred during the passage of the shoulders, and he wished Dr. Duncan had treated of this. As to the relation of these cases to fever, septicæmia, etc., he had no doubt there was some important connection.

Professor SIMPSON was not astonished at the frequency of these lacerations, as exact observations such as those of Dr. Duncan and Schroeder had always showed them to be present. Many years ago, when investigating this subject, he had found that in all primiparous cases there was a rupture. He alluded to a case in which an extensive internal rupture occurred, a large flap of tissue being extruded without rupture of the perineum. In this case no tear could be felt before the head passed. In the Maternity Hospital he had lately had opportunity of verifying the results of Dr. Duncan. Referring again to the frequency of rupture in primiparæ, he noticed that, in a paper by Dr. Hunter on an epidemic of puerperal fever in Linlithgow, it had been observed that the fever had specially attacked primiparæ. In multiparous cases in the Maternity he had found a good many internal fissures. Lacerations were more pronounced in proportion to the diameter of the fœtal head. He attached great importance to the passage of the shoulder as a cause of rupture. Lately, in a case at the Maternity in which forceps were used, there occurred only a slight fissure during the passage of the head, but when the shoulder came forward the tear extended back to the anus. He referred to the greater frequency of lacerations on the left than on the right side as brought out by Dr. Duncan's paper, and wondered if this had anything to do with the position of the patient during delivery.

Dr. DUNCAN, in reply, said that he did not attach importance to the opinion of practitioners who had not made deliberate and careful examination of the parts after delivery. He referred to the case he had related of a primipara in which he had no suspicion of rupture, and the patient complained of nothing whatever, and yet, on examination, he had found most extensive lacerations. As to the forceps, he would say, in answer to Dr. Milne, that it had been proved in the Dresden Hospital that lacerations were more common in these cases; but he allowed that proof was yet required to demonstrate whether the lacerations in these cases were caused by the forceps, or the natural results of the conditions requiring the use of the forceps. He had little doubt but that there must be some connection between the use of the forceps and the greater mortality in instrumental cases. He thanked the Fellows for the reception given to his paper.—*Obstetrical Journal of Great Britain*, May, 1877.

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Structure of the Placenta in Extra-Uterine Fœtation, and Intra-Peritoneal Migration of the Ovum.

Dr. LEOPOLD, of Leipsig, relates (*Archiv für Gynäkologie*, B. x. H. 2) a case of tubal fœtation, in which a migration of the ovum from the ovary of one side across the peritoneal cavity into the Fallopian tube of the opposite side appeared to be demonstrated, and in which a microscopic investigation was made into the structure of the placenta. The patient was thirty-seven years old, and the last normal menstruation took place at the beginning of December, 1875. A week after the time when the next period was due, metrorrhagia commenced, and lasted three weeks. During March she had several attacks of hypogastric pain, and on March 24th similar symptoms of a more severe kind accompanied by vomiting. On March 28th the uterus was found to be enlarged, anteflexed, and somewhat tender. Behind the cervix was a tender swelling, but both lateral culs-de-sac were free. No tumour at the side or in front of the uterus could be detected, the abdominal walls being much laden with fat. On April 2d, symptoms of pneumonia in the right lung came on, and the retro-uterine swelling was found to have increased to the size of a child's head, the enlarged uterus being pushed forward and upward against the abdominal wall. A diagnosis was made of normal pregnancy combined with a retro-uterine tumour, probably a hæmatocele. The condition of the patient continued greatly to

improve up to April 18th. On that day, shortly after having got out of bed for the purpose of defecation, and having laid down again, she was suddenly attacked by dyspnœa and died.

At the autopsy, the iliac veins were found to contain some brownish friable clots. The pulmonary artery near its origin from the heart contained an old adherent embolus, which extended into both its main branches. The space remaining by its side was blocked by a small recent embolus. The lower lobes of both lungs contained numerous hemorrhagic infarctions. Douglass's fossa was filled by a large mass of clot weighing several pounds, the intestines above it being united by peritoneal adhesions. At the distal extremity of the left Fallopian tube was an extra-uterine sac, about the size of a cocoanut, containing a somewhat macerated fœtus of about three months' development. The uterus was 12.5 cm. long, the cavity of its body being 8 cm. long. Its mucous membrane was for the most part about 2 to 3 mm. thick, but there were some flakes of membrane from 6 to 8 mm. thick. The right Fallopian tube was completely closed at the uterine end, and had undergone cystic dilatation. The entrance of the left tube into the uterine cavity was obstructed by two small mucous polypi, which must have prevented the ovum from ascending the tube from the uterus, even if the occlusion of the right tube was not prior to the fœtation. The right ovary contained a corpus luteum, 4.3 by 1.4 cm. in size. The left ovary was flattened and atrophied. It thus appeared clear that the ovum must have traversed the abdominal cavity from the right ovary to the left tube. The author believes that probably many ova had escaped into the abdominal cavity and been lost, but that one had happened to come within reach of the current of serum setting towards the fimbriated extremity of the left tube. The wall of the extra-uterine sac was very thin and partially eroded at its lower extremity, and from this point the hemorrhage appeared to have occurred.

On microscopic examination, the uterine glands were found to be enlarged and dilated into lamellary cavities, at the part where separation from the muscular coat appeared almost ready to take place. The cells of the mucous membrane resembled ordinary decidual cells, except that they were smaller. The cylindrical epithelium on the surface was intact in parts. Small curling arteries were seen, and numerous dilated capillaries close to the surface. The veins were few, and were directed perpendicularly from the surface. Here and there were extravasations of blood beneath the surface of the mucous membrane.

The muscular wall of the Fallopian tube in the neighbourhood of the extra-uterine sac was increased to at least double its normal thickness, and was highly vascular, but the mucous membrane was very thin, not being more than ½ mm. thick, and showed few vessels and no glandular openings. Chorionic villi were attached over about half the inner surface of the sac. The muscular coat was thinned, and its fibres stretched asunder in places. Immediately within it were several layers of fibrin into which the villi were embedded, reaching the muscular coat, and some of them extending close beneath its serous covering. No trace either of decidua serotina or decidua reflexa could be discovered. This condition closely resembled that found in a preserved specimen of tubal pregnancy at the eighth week, which the author had examined, and in which the state of things had not been complicated by any deposition of fibrin. In that case the layer of villi lay immediately beneath the muscular coat, and even penetrated into it, without the intervention of any appreciable layer of decidua serotina. The extremities of the villi were surrounded by large bloodvessels, but no inter-villous blood spaces could be discovered. The rest of the interior of the sac was covered by a very thin mucous membrane, consisting only of one or two layers of cells resembling ordinary decidual cells.—*Obstetrical Journal of Great Britain*, May, 1877.

Adenoma of the Uterus.

In the *Zeitschrift für Geburtshülfe und Gynäkologie*, B. 1, H. 1, Professor SCHRŒDER gives an account of several cases of adenoma of the uterus. He remarks that simple growths from the uterine mucous membrane have often a structure more closely resembling that of malignant disease than those in any other part of the body. In growths of connective tissue such numerous clusters of large spindle cells are found as closely to resemble a sarcoma; and the uterine glands are liable to be hypertrophied in such a way that, upon a section, they may be mistaken for the alveoli of a carcinoma, filled with epitheloid cells.

Two cases of adenoma diffusum are described, and two of adenoma polyposum.

Case 1.—Adenoma diffusum. A woman, thirty-nine years old, whose menstruation had been irregular for thirteen years. For eight years she had been married, but without children; for a year and a half she had had a whitish blood-tinged discharge, and for eight months profuse hemorrhage in addition. The uterus was enlarged, the sound passing 8½ cm. (3¾ inches). It could be rotated in the cavity of the uterus, and shreds of mucous membrane were removed by it. The cervix was narrow and hard. The cervix was dilated with tents, but not sufficiently to admit the finger. The uterine cavity was then carefully scraped with the sharp curette, bringing away shreds of mucous membrane; and perchloride of iron was afterwards injected. The hemorrhage ceased from this time, and the length of the uterine cavity was reduced to 7½ cm. (3 inches). By microscopic examination the shreds removed were found to be made up of alveoli clothed with cylindrical epithelium, and separated from each other only by very thin walls.

Case 2.—Adenoma diffusum. A woman, forty-nine years old, who had had four children, the last twelve years previously. For some months she had had severe and repeated hemorrhage. The cervix was found widely patulous, but the internal os closed. The uterus was somewhat retroverted, and was enlarged and tender. After dilatation of the cervix with tents, the uterine cavity was found to be covered with inequalities, having a spongy feel. These were scraped off with a sharp curette, and perchloride of iron afterwards injected. The fragments were found to consist of thickened mucous membrane, showing the uterine glands somewhat enlarged, and lying close together.

Case 3.—Adenoma polyposum. A woman, forty-five years old, who had been married fifteen years; without children. Menstruation had always been copious, and for the last four years exceedingly profuse. A polypus, as large as a child's fist, was found in the vagina, the pedicle being attached above the internal os. The polypus was removed by the écraseur, and was found to contain numerous cystic cavities of the most various sizes, resembling those seen in a small ovarian tumour. The pedicle was found to consist of uterine tissue, containing involuntary muscular fibres; the rest was made up of enlarged uterine glands, showing all transitions from the normal size to that of considerable cysts, and lined with cylindrical epithelium. The intervening substance consisted of cellular tissue, containing numerous nuclei. The growth was thus not a simple product of mucous membrane, unless, with Dr. J. Williams, the inner part of the muscular coat of the uterus be regarded as the muscularis mucosæ.

Case 4.—Adenoma polyposum. A woman, fifty-nine years old, married, but without children. She had undergone several operations for polypi, the last seven years ago. Lately she had suffered from severe and long-continued hemorrhage. The uterus was found considerably enlarged; the cervix closed. Small incisions were made in the os, but did not allow the finger to penetrate to any great distance. As the patient's husband objected to the use of tents, a long pair of forceps was introduced through the cervix, and a polypus, as thick as a little finger, was removed by its means. It was found to consist of hypertrophied uterine glands, without any cystic degeneration, combined with rapidly growing cellular tissue.

The author calls attention to a symptom which he considers to be of diagnostic importance. This is the wide dilatation of the cervix, while the internal os remains tightly closed, and the cervix thus acquires a bell-shaped form, and dilatation is rendered difficult.—*Obstetrical Journal of Great Britain*, April, 1877.

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The Antiseptic Method in Ovariotomy.

In the *Sammlung Klinische Vortrage*, No. 111, Prof. OLSHAUSEN expresses the opinion that the peritoneum is extremely prone to absorb septic material, but that provided this be excluded, it is very tolerant of injuries. He considers that almost all deaths after ovariotomy are due to septicæmia, and not, as was formerly supposed, to traumatic peritonitis. As a means of prophylaxis against such infection he has made trial of abdomino-vaginal drainage, through Douglass's fossa, as recommended by Marion Sims, and both he himself and Prof. von Nussbaum attained by this means more favourable results than they had experienced before. He now, however, considers that it will become obsolete, as being superseded by a strict application of Lister's carbolic method. He was at first deterred from trying this by the results of three cases recorded by Schröder, of which two were fatal, and by the issue of two operations which he saw performed by Volkmann, in 1873, on cases neither perfectly simple nor specially unfavourable. Both patients rapidly died from septicæmia. He now believes that this was due to an imperfect application of the antiseptic dressing. He remarks that it is difficult so to apply it to the abdomen as to exclude all access of air, and that this can only be done by a liberal use of salicylized cotton-wool to fill up interstices about the epigastrium, inguinal regions, and symphysis pubis.

Prof. Olshausen's first experience of vaginal drainage was favourable. In the first 14 cases he had only 4 deaths, but the final result was 11 deaths out of 29 cases, the rooms where the operation was performed having probably become gradually infected. Since then, operating strictly according to Lister's method, without drainage, he has had 8 cases without a death, and Schröder has had 6 without a death. Von Nussbaum had 3 deaths out of 6 cases, in which he used vaginal drainage, but after giving it up, only 5 deaths in 21 cases, of which none were from septicæmia. The author thinks that drainage is less successful in simple cases than in more difficult, because it then seems needless to inject through the tube so frequently, and recommends that, if the tube be used, injections should be made almost every hour, both by day and night, for the first three days. In three cases he tried the carbolic spray combined with vaginal drainage. The first two patients recovered, but the third died from septicæmia. With a strict execution of Lister's method, he considers that even abdominal drainage may be restricted to exceptional cases, and that the toilette of the peritoneum may with safety be made more incomplete. He has but little fear of carbolic poisoning, and has only occasionally seen a temporary blackening of the urine. He considers the intra-peritoneal treatment of the pedicle by tying it with carbolized gut to be a necessary complement of the antiseptic method. Out of 33 cases so treated he has not once seen hemorrhage, gangrene of the stump, or the formation of an abscess about it. When the lower part of a cyst is firmly adherent in the pelvis, he considers that it may safely be left undisturbed, the cyst-wall being tied in several sections, and the rest of the cyst cut away. He recommends the same plan also to be carried out, if possible, if the cyst is found to have become developed between the folds of the broad ligament.—*Obstetrical Journal of Great Britain*, April, 1877.

Medical Jurisprudence and Toxicology.

Medical Evidence from the State of the Ovum or Fœtus in cases of Criminal Abortion.

Is it possible from the examination of the aborted ovum embryo, or fœtus, to give an opinion whether the abortion has resulted from accidental or criminal causes? This question has been lately considered by the *Société de Médecine Légale*, in reference to a case which occurred to M. GULLARD. On this occasion, M. Gullard gave a strong opinion that the abortion was the result of a criminal act. The reasons he assigned were based partly on an anatomical examination of the aborted ovum, and partly on moral circumstances. It is with the former only that an English medical jurist is concerned, the moral circumstances in this country being left for the consideration of the jury.

The anatomical reasons assigned by M. Gullard for his opinion that the abortion was criminal, appeared to the society so unsatisfactory that they were referred to a committee for a report. The conclusions at which the committee arrived were these.

1. Abortion in the *first month* of pregnancy is always attended with the expulsion of the complete ovum (*en bloc*), and it passes from the woman unperceived.

2. The aborted ovum may, however, in some cases, undergo spontaneous rupture during its passages through the neck of the uterus.

3. From the *second* to the *third month* the ovum may be also expelled in a complete state; but this is not usual, except when the fœtus is dead. When it is living it is more common to find that it has undergone rupture. This depends on various conditions, the degree of resistance offered by the ovum, the force of the uterine contractions, and on the state of the neck of the uterus, etc.

4. The absence of the fœtus does not prove, as M. Gullard inferred, that there has been criminal interference; for if the dead ovum have remained long in the uterus, the fœtus or embryo may disappear by solution.

5. Dating from the *third month*, it is usual to find the ovum broken up, abortion taking place at two periods, with the discharge of the fœtus followed by that of the placenta.

6. At the *fourth month* and subsequently, the abortion may be regarded as a delivery on a small scale. At this period, it is an exceptional occurrence to find the ovum expelled entire (*en bloc*).

7. Up to the third month, the cord is too weak to resist the force required for the extraction of the placenta, and *à fortiori* it would not be strong enough to allow an inversion of the parts by traction, as assumed by M. Gullard.

8. Rupture of the membranes, therefore, taken alone, cannot be regarded as a sign of intentional abortion, and even if accompanied with an inversion of the membranes, it cannot be admitted as sufficient evidence of a criminal act, even in the early stage of pregnancy.

It seems that M. Gullard had somewhat hastily assumed that the act of abortion in his case was *criminal*, because—1. The ovum at two months had not been discharged entire; 2. Because it presented an aperture through which the placenta, with the cord attached, was inverted, the inversion having been produced, as he supposed, by traction of the cord; 3. The cord was ruptured at the umbilicus of the fœtus; 4. The fœtus had been expelled living; and 5, it could not be found.

The reasons here assigned appear very weak, and wholly insufficient to allow a charge of criminality to be based upon them. The report of the commissioner shows, too, that they have no foundation in fact.—*London Med. Record*, March 15, 1877.

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Anatomy and Physiology.

Cerebral Localization.

DR. DAVID FERRIER contributes to the *London Medical Record* (April 15 and June 15, 1877) the following able resumé of a paper by MM. CHARCOT and PITRES (*Revue Mensuelle de Médecine et de Chirurgie*, Jan. 1877), which is of considerable importance as regards the pathological confirmation of recent experimental researches on the localization of function in the brain. Besides cases occurring in the Salpétrière, under their own immediate observation, others of a similar nature and bearing are referred to. A short historical sketch is given of the apparent discord between the facts of pathology and experimental physiology up to the discovery of the electric excitability of the cortex cerebri by Fritsch and Hitzig in 1870. Flourens, as is well known, denied all differentiation of function in the cerebral hemispheres, and in particular stated that the hemispheres had no relation to muscular movements. His experiments led him to very simple rules of clinical diagnosis. "A lesion of the encephalon, which causes loss of station and locomotion, is situated in the cerebellum; that which determines general and universal convulsions is situated in the medulla oblongata; and, if the symptoms be simply stupor or loss of perception or of intelligence, the lesion is situated in the cerebral hemispheres." Opposed to these conclusions, cases were on record which tended to show that certain limited lesions of the cortex cerebri determined persistent paralysis or convulsive phenomena. Lallemand (*Recherches Anat.-Pathologiques sur l'Encéphale*, 1820–34) gives three cases of this nature; Fabre (*Thèse*, 1832) reports a case of right hemiplegia, due, as shown by *post mortem* examination, to a clot of the size of a sparrow's egg, situated "in one of the convolutions of the lateral external and slightly posterior surface of the left hemisphere."

Assuredly, if all lesions of the cortex had been associated with affections of motility, it would have been an easy matter to arrive at definite conclusions in human pathology, regardless of the experiments of physiologists on the lower animals. But, as a set-off to the cases of paralysis with cortical lesions, there are numbers of cases on record in which extensive lesions of the cortex caused no affection of motility. Hence arose hesitation on the part of physicians to come to any definite conclusion, some denying any constant effect of cortical lesions, and others forming all kinds of ingenious speculations.

Some attempts were, nevertheless, made to determine the functions of the different parts of the hemispheres. The attempts of Bouillaud and Dax to fix the locality of the lesion causing aphasia, are well known. In precisely fixing the situation in the third frontal convolution of the left side, Broca made decided advance. In 1836 an Italian physician, Taddei de Gravina, published a thesis, in which he endeavoured to show, by clinical facts, that the regular contraction of certain muscles, or of certain groups of muscles, was under the control of certain determinate regions of the brain. He believed that the fornix and the corpora mamillaria regulated the muscles of the face, the lower jaw, and the tongue; and that in the lower plane of the middle lobes were situated the centres of the sterno-cleido-mastoid muscles. Though his con-

clusions were erroneous, they are interesting, as showing the tendency to localization of function.

Lastly, Hughlings Jackson, by many observations during several years, showed that certain superficial lesions of the cortex caused a special form of epilepsy, a clinical study of which had also been made in 1827 by Bravais (*Recherches sur les Symptômes et le Traitement de l'Epilepsie hémiplégique. Thèse*, Paris, 1827).

In spite of these facts, the majority of physicians and physiologists refused to admit the doctrine of cerebral localization; and Vulpian, writing in 1866 (*Leçons*), thus summed up the conclusions which then seemed warranted. "I believe that the doctrine of localization has not received, in the facts of aphasia, that support which it had hoped for. It is possible, strictly speaking, that lesions situated in the course of certain fasciculi of the cerebral fibres, may influence one function more than another, but it is not demonstrated; and, as far as relates to the gray matter of the cortex, there is nothing to justify a similar hypothesis."

The question remained so up to the experimental researches of Fritsch and Hitzig, followed by those of Ferrier, Nothnagel, Schiff, Braun, Eckhard, Carville and Duret. Leaving out all points of detail or differences in interpretation as to the results, it seems conclusively demonstrated that the stimulation of certain parts of the cortex is followed by distinct reaction, while that of others is not. It has been shown that, in the convolutions bounding the fissure of Rolando in the monkey, and those surrounding the crucial sulcus in the dog, the cat, etc., there is a zone, the excitation of which causes localized movements on the opposite sides of the body, and the destruction of which causes disorders of voluntary motion, or even persistent paralysis, while in regions closely related to these no such effects are produced.

The application of these facts to human pathology naturally followed, as a matter of course. The histological researches of Betz, verified by those of Mierzejewski, give a kind of anatomical confirmation of these results, by showing that in the vicinity of the fissure of Rolando, and particularly in the paracentral lobule, there exist large pyramidal cells similar to those of the anterior horns of the spinal cord.

If, however, the facts are really applicable to man, it ought to follow:—

1. That lesion of the motor region of the cortex ought to produce motor symptoms;

2. That lesions of the non-motor region should not cause motor symptoms. [This requires qualification.—*Rep.*]

It would seem at first sight a comparatively easy matter to determine the truth or falsity of these propositions by reference to recorded cases, but it is surprising how few can be made available for trustworthy conclusions, owing to the vagueness and want of precision as regards the situation and extent of the lesions. Thus even Cruveilhier, usually so accurate in other respects, records a case of persistent left hemiplegia, due, as he says, to softening of the "posterior convolutions." On examination of the figures representing the lesion, it is found that the lesion is situated at the level of the inferior parietal lobule, and that it had destroyed the middle third of the ascending parietal convolution. It is therefore necessary, in examining the records of cerebral disease, rigorously to exclude all cases in which the exact topography of the lesion is not given, as also all multiple and diffused lesions. Great care must also be exercised in reference to cases of tumour, on account of the difficulty of estimating the indirect effects of compression on distant parts. When these principles are carried out, comparatively few of the older records have any value. Recent cases, carefully recorded within the last few years, are more to be relied on, and it will be found that they confirm the fundamental doctrines of cerebral localization.

[The authors give in a note the method employed at the Salpétrière for obtaining faithful and lasting records of cortical lesions. The hemispheres are stripped of their membranes and macerated for about fifteen days in dilute nitric acid (1 in 5). They are then removed and exposed to the air. They harden, and become reduced to half their volume, but preserve their general

form and relations unaltered. When thoroughly prepared they become as hard as wood, of a deep yellow colour, and perfectly dry on the surface. When a lesion of the cortex is discovered in *post-mortem* examinations, the exact topography of the lesion is painted in oil-colours on one of the hardened brains, and in this way an exact representation of a durable nature is obtained.]

Lesions of the Non-Motor Regions.—That extensive lesions of the cortex may occur without motor symptoms, is abundantly proved both by old and by recent observations. Andral relates four cases observed by himself, and several by others. Vauttier (*Thèse*, 1868) has collected several, and it would be easy to multiply them. How to explain these cases on the theory of functional homogeneity, has always been a matter of difficulty. The usual explanation given is that, owing to the slowness of the development of the lesions, time was allowed for functional compensation by other parts of the hemispheres. This explanation was given by Lallemand, and adopted by Durand-Fardel.

But this explanation is shown to be untenable by the occurrence of cases of wounds of the brain which have not caused either paralytic or convulsive phenomena. Many such cases are on record; among others the celebrated American crowbar case. The authors have had two similar cases under their own observation, and they refer to one recently (February 16, 1876) brought before the Société de Biologie, by M. Marot, where, as the result of a comminuted fracture of the right frontal bone, the upper part of the first right frontal convolution was lacerated. The patient died of pyæmia, without having exhibited any motor symptoms. A case was communicated by M. Herpin to the Société Anatomique (May, 1876) of extensive laceration of the temporo-sphenoidal lobe, also without motor symptoms. These cases, in which there was total absence of motor symptoms, cannot be explained away by the slowness of growth of the lesions. As will be shown, the whole depends on the position of the lesion; a fact which can only be accounted for by the functional differences of the regions in question.

It is important to determine accurately by clinical and pathological observation which regions may be affected without giving rise to disorders of motility. Several cases are given in detail, of which the following is a short abstract.

The first case is one of softening of the angular gyrus, of the posterior half of the island of Reil, and of the upper extremities of the superior and middle temporo-spheroidal convolutions, in which no symptoms were observed. In a second case there was found after death a patch of softening occupying the first and second occipito-temporal convolutions, commencing one *centimetre* posterior to the subiculum, and extending backwards to about three *centimetres* in front of the tip of the occipital lobe in the left hemisphere. The symptoms were those of senile dementia, but there were no motor disturbances. Both these cases are illustrated by figures of the lesion. M. Sabourin communicates notes of two cases of latent softening occurring in the clinique of M. Ledentu. In one of these the lesions occupied the same position as in Case II.; in the other there was softening of the cuneiform lobule and the posterior two-thirds of the quadrilateral lobule of the left hemisphere. The same author also brought before the Société Anatomique (October 21, 1876) a case of extensive softening of the occipital and temporo-sphenoidal lobes, in which there was no trace of hemiplegia. Such cases of softening in the region of the occipital lobes, cuneus, quadrilateral lobule, and temporo-sphenoidal lobe, are common enough. A case is given from M. Vauttier's thesis, in which there was an extensive area of softening on the convexity of the posterior lobes, without any motor symptoms.

Lesions limited to the anterior lobes are more rare. Lesions affecting the convexity of the antero-frontal regions, or the orbital lobule, are not associated with paralytic phenomena, so far as cases have been observed. In Marot's case, already referred to, of lesion of the first frontal convolution of the right hemisphere, there were no affections of motility. In a case related by M. Baraduc, both frontal lobes were disorganized in a great part of their extent. This patient was for six years an inmate of the Hospice des Ménages. "He had no will or spontaneity; he marched about the whole day *au hasard*, without deter-

minate aim, picking up objects which lay in his path." [Compare the effects of similar lesions of the brain of the monkey. *Functions of the Brain*, p. 231.—*Rep.*] Recently the authors communicated a case to the Sociéte de Biologie (August 8, 1876), in which there was a clot of the size of a nut, situated on the second frontal convolution of the right hemisphere, which caused no motor symptoms during life. Among other cases of latent softening may be reckoned one by Andral, the record of which is sufficiently precise to be useful. In this there was softening of the orbital lobule of the left hemisphere. There was general feebleness, and the intelligence was "un peu obtuse;" but motion and sensation were intact.

It results from these facts that destructive lesions may occur in the temporo-sphenoidal lobe, the occipital lobe, the inferior parietal lobe, the *pli courbé*, the island of Reil, the cuneus, the quadrilateral lobule, the orbital lobule, and the anterior extremity of the first, second, and third frontal convolutions, without producing the slightest motor disturbance. [Compare the results of the Reporter's experiments on the brain of the monkey.] It is also important to note that these lesions cause no secondary degeneration of the spinal cord.

Lesions of the Motor Zone in General.—The motor region, according to the authors' observations, includes the ascending frontal and parietal convolutions, the paracentral lobule, and, probably, also the parts immediately adjoining, such as the base of the frontal and superior and inferior parietal convolutions. These regions, according to the results of experimental physiology, contain centres for differentiated movements of the opposite side of the body, face, limb, mouth, and tongue, etc. The results of destruction of these regions vary with the position of the animal in the scale, according to the reporter's views, which are quoted. The paralysis is transient in the dog, but permanent in the monkey. The observations of the authors on man are in accordance with the results of experiment on monkeys. But all lesions are not destructive. Some may give rise to irritation, and thus cause convulsive phenomena; others destroy and cause paralysis; while, in some cases, alternation of these phenomena may be observed. The authors first direct their attention to total and extensive lesions of the motor zone, and then to more limited lesions. Only those strictly limited to the cortex are considered, and all cases of diffused irritation, such as those caused by chronic meningo-encephalitis, or by simple or tubercular meningitis, are excluded. The symptoms observed in general paralysis are, no doubt, due to the cortical lesions of the motor zone; but it is very difficult, in all these cases, to be quite sure of the extent of the lesions, or to analyze all the symptoms.

The motor regions receive their blood-supply from the superficial branches of the Sylvian artery, and in such a manner, according to the researches of Duret, that the cortex may be deprived of its blood, while the circulation is unaffected in the central parts. From thrombosis or embolism of the Sylvian artery, after it has given off its branches to the corpus striatum, the cortical motor zone may be softened, and the result is complete hemiplegia of the opposite side, differing in no respect from "hémiplégie centrale vulgaire," resulting from destructive lesions of the optostriate nuclei.

The first case given is one of left hemiplegia of a complete character, the limbs being perfectly flaccid and powerless, but without loss of sensation. No difference in temperature was observed between the two sides. In this case there was softening of the regions supplied by the Sylvian artery, specially the lower two-thirds of the ascending convolutions, frontal and parietal, extending insensibly into the base of the second frontal gyrus, and into the inferior parietal lobule. The ganglia and rest of the brain were normal.

It is not, however, necessary that the lesion should directly affect the whole of the territory supplied by the Sylvian artery, in order to cause complete hemiplegia of the opposite side. A case is given, illustrated by a figure, of left hemiplegia, with conjugate deviation of the eyes, in which the lesion, though implicating the ascending parietal convolution and postero-parietal lobule, also involved the inferior parietal lobule, and the upper parts of the temporo-sphenoidal convolutions. No loss of sensation was observed. The basal ganglia were normal in this case.

In cases of lesions affecting the motor region, and not rapidly fatal, permanent contractures may occur. In these cases, descending sclerosis of the lateral columns of the cord has been found, in no wise different from that resulting from lesions of the internal capsule as described by Charcot.

A case of this nature is given, communicated to the authors by M. Brun, interne at the Salpétrière. In this case of left hemiplegia, of four years' duration, there was well-marked paralytic contracture of the arm, and less so of the leg. On *post-mortem* examination, a patch of yellow softening was found occupying the lower two-thirds of the ascending frontal convolution, the lower half of the ascending parietal convolution, the posterior three-fourths of the second and third frontal convolutions, and the whole of the island of Reil. The basal ganglia were normal. The sclerosis was, however, not specially investigated in this case.

In the following one, this was accurately investigated. This was a case of right hemiplegia, with aphasia and paralytic contracture of one year's duration. On *post-mortem* examination, superficial softening was found in the left hemisphere, affecting the base of the third frontal convolution, the whole of the ascending frontal and parietal convolutions, the two posterior digitations of the island of Reil, and the inferior parietal lobule. The corpus striatum and the optic thalamus were normal. Secondary degeneration was traced in the left crus, in the left side of the pons Varolii, and in the left pyramid. The cord was not examined. Lépine (*Des Localisations dans les Maladies Cérébrales*, 1875) has reported a similar case of hemiplegia of six years' duration, due to cortical softening, and with secondary degeneration in the motor tracts. The softening affected the ascending parietal and the ascending frontal convolutions, the island of Reil, and the superior and inferior parietal lobules. The ganglia were normal. A similar case, occurring in the clinique of M. Charcot, was brought before the Société de Biologie by M. Bouchard, and referred to by Trousseau. The softening was of three months' date, and occupied the anterior marginal convolution of the left side, the second and third frontal convolutions, and the upper part of the island of Reil. Secondary degenerations had occurred in the crus, the pons, the pyramid, and in the opposite lateral column of the spinal cord.

Limited Lesions of the Motor Zone.—In partial lesions of the motor zone, the hemiplegia is partial or dissociated; and, contrary to what occurs in general lesion, the hemiplegia is always accompanied by transitory primitive contracture, and may, if the patient survive, remain permanent, and be accompanied by secondary contracture. Frequently, also, in these cases epileptiform convulsions alternate with the paralysis.

In cases of lesion of the central ganglia, the hemiplegia is complete, and affects face, arm, and leg together; but in partial lesions of the cortex, the paralysis affects the face, or the leg, or the arm, or the leg and arm, without the face. Such a hemiplegia is to be called partial or *dissociated*. This fact of dissociation had not escaped the sagacity of Romberg, who stated that, when paralysis occurred from brain disease limited to the arm or leg, the lesion was situated in the hemisphere. Charcot and Pitres would affirm, with more precision, that when paralysis, limited to one limb, or to the face (monoplegia), results from cerebral disease, the lesion is in the central motor zone, or in the white matter immediately subjacent. Another character of these dissociated cortical paralyses is, that the parts affected are frequently the seat of early contracture more or less pronounced, and more or less peristent.

The first case related is one of left facial monoplegia, accompanied temporarily with a certain degree of rigidity in the limbs of the same side. On *post-mortem* examination, it was found that the cerebellum, the medulla oblongata, the pons, and crura were intact.

A slight superficial yellow patch was found about the middle of the ascending frontal convolution on the left side, but not deeply affecting the gray matter. The right hemisphere weighed less than the left, and the surface was found softened and adherent to the membranes in the region of the third frontal convolution, the lower third of the ascending frontal, the lower fourth of the ascending parietal, the whole of the inferior parietal lobule, including

the angular gyrus, the posterior half of the superior parietal lobule. the whole of the superior temporo-sphenoidal convolution, and the island of Reil.

The lesion here was very extensive, and it may seem strange that this case is quoted as one of limited lesion; but it will be seen that, to a large extent, it occupied the non-motor zone, and affected this only at the lower extremity of the ascending convolutions.

In the next case, the lesion was limited to the upper extremity of the ascending convolutions. In this there was observed a primitive contracture, followed by paralysis and flaccidity of the limbs on the opposite side, without any affection of the face. There was no conjugate deviation of the eyes, and no affection of sensation on the paralyzed side.

Another case is given in detail, in which there was paralysis of the face and arm on the left side, without paralysis of the leg.

In this case, the only lesion was an area of softening occupying the lower extremities of the ascending frontal and ascending parietal convolutions. The basal ganglia were absolutely intact.

M. Maurice Raynaud communicated to the Société Anatomique (July 25, 1876) a case of a phthisical patient who three days before death was attacked by paralysis limited to the left arm. After death, a small focus of red softening was found in the right hemisphere developed round a meningeal tubercle, of the size of a 20-centime piece, and situated in the ascending parietal convolution and the gray matter at the base of the fissure of Rolando, three centimetres from the longitudinal fissure.

In a note, the details are given of a case recently communicated by M. Proust to the Académie de Médecine, which is of considerable interest and importance. The following are the salient points. A young man, aged nineteen, as the result of a blow with a sabre-bayonet on the region of the left parietal eminence, fell down temporarily unconscious. Next day, there was another attack of unconsciousness of equally short duration; and then apparent recovery, till eleven or twelve days after the accident, when he was attacked with facial paralysis on the right side, limited to the inferior facial region, paresis of the right arm, and a certain degree of aphasia. The right leg was unaffected, and there was no loss of sensation, common or special. Proust, diagnosing inflammatory compression as the result of the wound, after consultation with M. Terillon, decided on trephining, which was done on Oct. 27, nineteen days after the accident (Oct. 8). Immediately on the operation, and before the wound was dressed, the symptoms had begun to disappear. The face remained much in the same condition, but the paresis of the arm had diminished and the aphasia had disappeared. The operation was followed by an attack of erysipelas, which ceased by the 9th of November, and from that time recovery was complete.

On careful investigation, MM. Proust and Terillon arrived at the conclusion that the part immediately injured was the ascending parietal convolution, on a level with the second frontal, and that the ascending frontal convolution and the second and third frontal convolutions were secondarily influenced by the lesion in their proximity.

M. Lucas-Championnière, in 1874, practised trephining for a similar case, in which, from injury of the left side of the head, paresis occurred in the right arm, and partial epileptiform seizure. The case is reported *in extenso* by M. Paris (*Indicature de la Trépanation des Os du Crâne au point de vue de la Localisation Cérébrale, Thèse*, 1876); but the seat of the lesion was not described accurately enough to be made the basis of rigid conclusions.

Another case is quoted from Cruveilhier, under the heading of Paralysis with pains and epileptiform attacks in the right limbs. There was no paralysis of the face. A tumor of the dura mater pressed on the "scissure interhémisphérique." An examination of the plate shows that the region directly affected was the paracentral lobule at the upper extremity of the ascending convolutions.

In certain cases the cortical lesion, instead of remaining circumscribed, advances gradually. When it has invaded the whole of the motor zone, the hemiplegia becomes complete, and it is impossible then to distinguish between

cortical and central paralysis; but the clinical history shows that the case has been one of successive monoplegiæ, a character which belongs to cortical lesions alone. Many examples of this will be given when the authors treat of partial epilepsy. Bernhardt has reported several cases of cortical lesions with monoplegia, but his topography is unfortunately not very precise. His papers are to be found in the *Archiv für Psychiatrie und Nervenkrankheiten*, 1874, vol. iv.

When cortical lesions are not rapidly fatal, they are followed by permanent paralysis, with secondary contracture, just as in lesions of the motor track of the internal capsule. In illustration of this statement, several cases are detailed.

The first is a case of permanent left hemiplegia, with secondary contracture of the limbs. The paralysis did not affect the face or the tongue, and sensation was intact. From the apoplectic seizure to death a year intervened. On *post-mortem* examination, an old yellow softening was found in the middle third of the ascending parietal convolution on the right side. The ganglia were intact. Without doubt, though not specially investigated, the secondary contracture was due to sclerosis of the lateral column of the cord on the side opposite the lesion.

In the next case recorded, this descending degeneration was carefully determined. This was a case of permanent right hemiplegia in a woman aged 79, for several years among the incurables under the care of Charcot. She had no aphasia, but was very deaf. She had slight paralysis on the right side of the face, and paralysis, with rigid contracture of the right arm and leg, without affection of sensation. After death, an area of softening was found in the left hemisphere, well defined, and limited to the lower two-thirds of the ascending parietal convolution. The other parts and ganglia were normal. The left side of the pons was somewhat atrophied. The left anterior pyramid was also atrophied, and in microscopical examination, there was found a band of sclerosis, lozenge-shaped on transverse section, occupying its antero-internal part.

The next case given is one of spasmodic infantile hemiplegia. A girl, aged 10 years, had suffered from convulsive attacks without paralysis since the age of four and a half, and was received into the Salpétrière, under the care of M. Charcot, on January 2, 1876. In 1872 she had had attacks of agitation or convulsion of the right leg, without loss of consciousness. The limbs of the right side became gradually paretic and rigid. In 1875 the attacks became more frequent, and the rigidity more marked. On admission, the state of contracture of the right limbs existed, but no facial affection. She had numerous epileptiform seizures, and died April, 1876. On examination after death, there was found discoloration of the anterior extremity of the first frontal convolution of the right hemisphere. In the left hemisphere there were several patches of a similar discoloration scattered on the surface of the convolutions, and softening, with atrophy, of the whole of the paracentral lobule, and of the anterior third of the quadrilateral lobule. The ascending frontal and parietal convolutions were not affected further than about 1 cent. at their upper extremity. In the spinal cord was found a band of sclerosis occupying the posterior part of the right lateral column, like that resulting from lesions of the opto-striate nuclei or internal capsule.

M. Bourneville communicated to the Société de Biologie (Jan. 1876) a case occurring in the clinique of M. Charcot, of a girl, aged 18, who had had left hemiplegia from the age of 6, and had suffered from frequent convulsions and tremors in the paralyzed leg. There was no paralysis of the face or tongue. She died after a series of 297 fits. On examination after death, an area of cortical softening was found in the left hemisphere, anterior to the fissure of Rolando, and affecting the upper half of the ascending frontal convolution, at the point of origin of the first and second frontal convolutions, and the whole of the internal surface or paracentral lobule. The right lateral column of the spinal cord was distinctly atrophied, and throughout the whole cord this column was affected with sclerosis. In the cervical region, a band of sclerosis was also found in the antero-internal part of the left anterior column.

This existence of secondary scleroses in the spinal cord as the result of cor-

tical lesions is an important fact. They occur only when the lesions are situated in the motor zone, and not at all from lesions in the non-motor zone, however old, or however extensive these may be. Hence it may be concluded that between the cortical motor zone and certain fibres of the lateral tracts of the spinal cord there exist relations more or less direct, which do not obtain with reference to other regions of the cortex.

In the May number of the *Revue Mensuelle de Médecine et Chirurgie*, MM. Charcot and Pitres take up the subject of epileptiform convulsions in connection with lesions of the cortex.

These convulsions consist occasionally in a limited number of localized muscular spasms; at other times they have all the character of idiopathic epilepsy. They generally commence in an isolated group of muscles, and propagate themselves to other muscles of the same limb or to the whole body, before the patient loses consciousness. The loss of consciousness is not a constant phenomenon in epilepsy of cortical origin, and the individual can often give a complete account of the course of the attack. These epileptiform convulsions were observed by the older physicians, but only lately have their true nature and pathology been elucidated. Odier (*Manuel de Médecine Clinique*, 1811) published one remarkable case belonging to this group, and several are to be found in the classical works of Lallemand and Abercrombie. Serres (*Anatomie Comparée du Cerveau*, 1824–26) makes a very remarkable statement in reference to the causation of such phenomena, after relating the case of a young man who, after suffering from discharge from the right ear for eighteen months, began to be affected with convulsions limited to the left arm. On *post-mortem* examination, the portion of the brain lying on the petrous portion of the temporal bone was found to be in a state of putrid abscess. From this, and a similar case quoted from Sandifort, he concludes "that one may, from careful comparison of instances, indicate the seat of lesion in the brain, according to the limb which is affected by paralysis or convulsions. Thus, if the right arm be affected, the lesion will be in that portion of the brain which corresponds to the upper left parietal bone, and *vice versâ*."

In 1827, Bravais (*op. cit. ante*) described, under the name of *Epilepsie hémiplegique*, a variety of epilepsy commencing in one limb, or on one side of the face, or on one side of the body, giving exact descriptions of the phenomena; but he "completely neglected the anatomico-pathological aspect of these cases, and it is to Hughlings Jackson that we owe the first exact investigations on the relation of partial epilepsy to cortical lesions." More recently, the experimental researches of Hitzig, etc., fully confirmed the views expressed by Hughlings Jackson. Experiments on animals have shown that electrical irritation of the cerebral hemispheres frequently causes localized, unilateral, or general convulsions, having all the characters of those described by Hughlings Jackson in men; and Bartholow has shown that in man also the same method of irritation is followed by similar results. Convulsive attacks may result not only from immediate irritation, as in these experiments, but also from lesions of the cortex of long standing. Several experimental instances of this kind are quoted from Hitzig's observations *Ueber Production von Epilepsie durch experimentelle Verletzung der Hirnrinde* (*Untersuch. über das Gehirn*, 1874, p. 271). Epilepsy of cortical origin may, therefore, result from two different conditions: (1) under the influence of direct and immediate irritation; (2) under the influence of a permanent lesion. The same is found true in man. The epileptic attack may commence with the arm, the leg, or the face. It is possible that it may commence sometimes in the muscles of the trunk, the neck, or the viscera, but up to the present no such mode of onset has been described with precision.

Cortical Epilepsy commencing with the Arm.—Most commonly the spasms commence in the hand and particularly in the thumb and index-finger. According to Hughlings Jackson, the spasms commence in the parts most volitional, hence in the thumb and index-finger, which are special instruments of volition. The authors think that this explanation may be questioned, and that it is not impossible that the fact may be due to the more frequent occurrence of lesions in the centres for the arm. But whatever the explanation may be, the clinical

fact is established that it is in the thumb and index-finger that the spasms for the most part commence. The fingers flex or extend suddenly, then the spasms extend upwards. The convulsive action may remain limited to the arm, or may spread to the face and leg, or may become general. Consciousness is not usually lost till the convulsion has invaded a considerable muscular area. The convulsions last from one to five minutes generally, and are followed by a weak or paretic condition of the convulsed limb. The attack is often preceded by an aura referred to the parts about to be invaded. The frequency of the attacks is variable. Occasionally they occur every day or several times a day; occasionally months may elapse between successive attacks. Sometimes they go on more or less incessantly for several hours, and produce an *état de mal* of a grave character.

Of cortical epilepsy commencing in the upper extremity, the first five illustrative cases are quoted from Hughlings Jackson.

In the first—a case of convulsions limited to the right arm—a tumour was found in the posterior part of the first frontal convolution in the left hemisphere.

The second is a case of epilepsy commencing in the left thumb. A small tumour was found at the lower extremity of the ascending frontal on the right hemisphere. But there were also some other partial indurations of the hemisphere, the situations of which are not determined.

In a third, in which convulsions always began in the left thumb, a small tubercle of the size of a nut was found at the posterior part of the third frontal convolution of the right hemisphere.

In a fourth, in which the attack began in the right shoulder and descended the arm, a rounded tumour about an inch in diameter was found at the posterior extremity of the first frontal convolution in the left hemisphere. In the intervals of the attacks, the arm was paralyzed.

In a fifth, in which the attacks were frequently limited to the right arm, the spasms began at the little finger of the right hand, and gradually spread to the right side, with loss of consciousness. Right hemiplegia gradually developed itself. On *post-mortem* examination, several tumours were found in the left hemisphere, of which the largest, measuring two inches and a half by one inch and a half, was situated in the upper part of the parietal lobe, close to the intrahemispherical sulcus, and pressing on the upper part of the ascending parietal convolution.

In a case occurring in the Salpétrière, under the care of Charcot, and reported by Lépine (*De la Local. dans les Mal. Céréb.*, 1875), left hemiplegia occurred on the 27th November, 1869; and on the 30th, a convulsive attack without loss of consciousness began in the left arm. On *post-mortem* examination, an apoplectic extravasation was found occupying the posterior part of the first frontal at its junction with the ascending frontal convolution of the right hemisphere.

The next case is one of left hemiplegia with aphasia, under the care of Charcot. The aphasia rapidly disappeared, but the paralysis continued. After three months the patient began to suffer from epileptic attacks, which always began in the left arm. After death, a patch of yellow softening was found at the base of the first and second frontal convolutions, and extending in the centrum ovale almost to the ventricle. The ganglia were intact.

A man, aged 48, after an apoplectic attack with violent convulsions, recovered with monoplegia of the right arm. Three weeks afterwards, he began to suffer from unilateral convulsions of the right side, frequently limited to the right arm and forearm. After death, a glioma of the size of a pigeon's egg was found in the middle third of the ascending frontal convolution on the left side.

M. F., aged 28, was suddenly seized with a convulsive attack, beginning in the fingers of the left hand. A second attack occurred two days later, leaving paresis of both limbs on the left side, without affection of sensation. Death occurred in about three months. On examination, a tubercular mass was found in the middle third of the ascending frontal convolution of the right hemisphere.

A small recent tubercular mass was also found in the right side of the pons Varolii.

An interesting case is next related of monoplegia of the left arm associated with epilepsy, beginning in the left arm, which ultimately recovered. An old woman, aged 81, was suddenly, and without any premonitory symptoms, seized with paralysis of the left arm. She complained of pain in the head, limited to the right parietal region. There was no other paralysis, either of motion or of sensation. Three days later, she was seized with sudden tonic spasm of the left arm, which was raised to a right angle with the trunk, the fist being closed, and the head and eyes directed to the left. After a few seconds, the tonic rigidity gave place to clonic spasms on the left side, with loss of consciousness. This position lasted four hours, after which the left arm remained paralyzed, and also some degree of paralysis was observed in the lower part of the left side of the face, with rotation of the head and eyes to the right. Next day the rotation of the head and conjugate deviation of the eyes had disappeared, and the facial paralysis was almost imperceptible. On the following day it had almost disappeared, and some power had returned in the left arm, which, however, tingled considerably. In the course of a month, complete recovery had taken place.

Epilepsy commencing with the Leg.—This is more rare than epilepsy commencing with the arm, but its progress is in all respects analogous. The aura starts often in the foot or calf, and has the character of an acute pain, a cool breeze, or a dragging sensation, which mounts up to the arm or face. As in the other forms, the convulsions may remain limited to the leg or become general with loss of consciousness.

An example of this form, communicated by M. Broca to the Société de Chirurgie (Dec. 19, 1866), is quoted from an account given by M. Ach. Foville (Art. "Convulsions." *Nouv. Dict. de Méd. et Chir. pratiques*). This was a case of epilepsy consequent on injury to the skull in the left fronto-parietal region. The epileptic attacks began in the right leg. Recovery followed trephining on the seat of injury.

Another case is reported from Griesinger, in which the seat of the lesion was carefully noted. It is that of a man who became the subject of frequent clonic spasms in the right leg. These occasionally extended to the whole of the right side of the body, with loss of consciousness. In the interval of the attacks, the right limbs were completely paralyzed, the face not being affected. After death, a hydatid cyst, 1.5 inch by 1.8 inch, was found on the surface of the left hemisphere, the anterior extremity being on a line drawn perpendicularly upward from the external auditory meatus. There were also, however, five other similar cysts of the size of a haricot, situated on the posterior part of the parietal lobe and on the frontal lobe.

Epilepsy commencing with the Face.—The attack may begin in the eye, eyelids, cheek, or lips, and with an aura. Most frequently it commences in the lips, and the angle of the mouth is drawn to the side of convulsion; then convulsive movements occur in the lips, eyelids, and extend to the neck and to the side of the body, or become general. During the attacks the face and eyes are drawn strongly to the side opposite the convulsions. Often at the commencement the head and eyes are directed to the side in which convulsion is about to occur, and then during the attack they turn to the opposite side. The tongue is also affected, and is frequently bitten.

The first case alluded to is quoted from Hitzig (*Archiv für Psychiatrie*, 1872). This relates to a French soldier who was wounded in the right side of the head by a bullet on December 10, 1870. At the beginning of February he began to suffer from clonic spasms of the right side of the face and tongue, followed by some degree of paralysis. The convulsions were occasionally repeated, and extended more or less unilaterally. There was no loss of consciousness. After death, corresponding with the wound in the skull an abscess about 0.8 inch in diameter was found in advance of the fissure of Rolando, between this and the pre-central fissure, at the lower part of the ascending frontal convolution. Some hemorrhagic points existed on the brain, more numerous in the right than left hemisphere, at the junction of the gray and white matter.

onsistence of the brain was normal, except in the immediate neighbourf the abscess. A very interesting case is reported by Wernher (*Archiv . Anat. und Physiol.*, Band lvi.). The patient, after a depressed fracle left temporal region, showed on the following day paresis of the the right side of the jaw, and of the right eyelids. In the night e on. On the second day after the injury, there were distinct facial the right side, and a certain degree of rigidity of the muscles of pasms of the right facial muscles. During the attack the neck, ht arm were affected. Death occurred four days after the s found that the membranes had been lacerated, and much rred on the convolutions bounding the fissure of Sylvius. On nvolutions there was an extravasation of blood mingled with pus, ended up to the parietal and temporal convolutions. The surface of ntal lobe was slightly softened.

A case presenting several interesting features was admitted into the Salpétrière, sent to Charcot as being "a curious case of hémiopia without apparent affection of the optic nerves, and without any alteration of central vision." M. Landolt's report on the case was, "Left hemiopia well marked. Pallor of the papillæ. No optic neuritis or atrophy properly so-called. Slight venous hyperæmia of the retina." The patient complained of pain in the head, referred to the middle frontal region. She began to suffer from frequent epileptic attacks with loss of consciousness, affecting more particularly the left side of the face, with rotation of the head and eyes to that side. Occasionally the spasms extended to the left arm, and very rarely to the leg. On careful examination, it was found that the first phenomenon of the attack was a slight lateral oscillation of the right eye; then this eye turned forcibly to the left. During this time the left eye continued directed forwards, and retained this position during the first half of the attack. In the second half, both eyes became directed towards the right. Left hemiplegia gradually came on, at first with internal strabismus of the left eye, and pupil smaller than on the right. On the last day, along with left hemiplegia and stupor, there was conjugate deviation of the eyes to the right.

The lesions found in this case were multiple, and therefore little reliance can be placed on it in a localization point of view. There were recent softening of the whole of the left lobe of the cerebellum, and an irregular lacuna of the size of a small nut in the left middle peduncle of the cerebellum. On the surface of the right hemisphere four foci of softening of long standing were found, two on the first frontal, one on the second sphenoidal, and the fourth on the ascending frontal convolution, between the basis of the second and third frontal gyri. Also a small lacuna of the size of a lancet existed in the lenticular nucleus on each side.

Another case is quoted from Gliky (*Deut. Archiv für Klin. Med.*, 1875), in which there were at first convulsions and gradually progressing left hemiplegia beginning with the left arm. On *post-mortem* examination, a lesion of a gliomatous nature was found in the gray matter of the ascending frontal and parietal convolutions, in the basis of the three frontal convolutions, and in the superior and inferior parietal lobules, paracentral lobule, and posterior internal surface of the first frontal convolution in the right hemisphere.

The epileptic attack can in a certain number of cases be excited by external stimulation. A case of this kind exists in the Salpétrière. She has been the subject of spasmodic infantile hemiplegia on the left side, and is occasionally attacked by spontaneous hemiplegic epilepsy. An attack can be induced by forcibly raising the point of the left foot.

When the attack is preceded by an aura, one may often avoid it by pinching the skin at the point of origin, or by compressing the limb above it. An interesting case of this kind is related by Odier (*Manuel de Méd. Pratique*, 1821).

On the Gasometric Analysis of Urea.

To quantitatively analyze urea by means of sodium hypobromite, Dr. Esbach, of the Neckar Hospital, now makes use of a new piece of apparatus, which he calls the gasometric analyzer. (*Bulletin Général de Thérapeutique*, February.) It is composed of two parts, one being the generator, and the other the gasometer. The generator is a cylindrical glass tube with a bulb in its upper third, closed below, and fitted with an accurately ground stopper. The gasometer consists of a somewhat wider graduated tube, open below, and about twice the length of the generator, with the top of which it communicates above by means of a narrow tube. A solid band of glass unites the bottom of the generator to the side of the gasometer about its middle.

The reagent employed, the so-called hypobromite of soda, is thus prepared:—

Water	60	cubic centimetres.
Sodic hydrate (36°) . . .	40	" "
Bromine	2	" "

As it decomposes by keeping, it should never be prepared more than eight days in advance. The irritation produced by the vapour of bromine is avoided by having some water in the flask holding the bromine. The water floats on the bromine, and allows very little vapour to escape when the stopper is removed. The necessary quantity can easily be withdrawn by a graduated pipette, the little layer of water that enters with the bromine allowing the operator to aspirate without any risk from the vapours.

The stand of the apparatus being fixed at the bottom of a jar containing water, the apparatus itself is introduced vertically and with the stopper out; the water, in consequence, rises in the gasometer to a mark in the little tube communicating with the generator. With the aid of a funnel, the reagent is poured into the latter until it rises as high as the bulb. Into another little tube of small bore, 1 c. c. of urine is dropped, and this is then carefully introduced into the generator, which is closed at the same time by its glass stopper. The evolution of nitrogen commences immediately. By raising the apparatus, the water in the gasometer tends to sink, and causes an aspiration, thus facilitating the disengagement of the gas, which is generally completed at the end of a minute. The level of the water inside and outside the gasometer having been made to coincide, the value of the gas is read off. Correcting for temperature, pressure, and tension of aqueous vapour, it will be found that one centigramme of urea gives 3.4 cubic centimetres (or thirty-four divisions) of nitrogen at 0° and 760 millimetres.

To avoid these necessary calculations, Dr. Esbach has introduced what he calls a correcting baroscope, and a set of baroscopic tables. The baroscope consists of a barometer U-tube, the closed end of which is dilated, and contains some chemically inert gas, and the other is drawn out to a fine point. The gas is separated from the atmosphere by a column of mercury, above which is a drop of water that maintains it always in a state of saturation. Here are realized the conditions under which a gas is collected in presence of water. The graduation that the instrument bears expresses the resultant of the atmospheric pressure, temperature, and aqueous tension. When the volume of nitrogen is read off, the baroscope is consulted, and a reference to the tables will give the amount of urea present in the urine.

Dr. Esbach claims rapidity as well as accuracy for his method. An analysis requires about five minutes, and the results obtained do not vary more than 1.6 per cent. In the case of albuminous urine, as the hypobromite decomposes albumen, it is necessary to separate this substance, which is readily done by boiling and filtering; but, if the urine be alkaline, it must first be acidified by the careful addition of a few drops of acetic acid.

In addition to urea, uric acid and creatinine are attacked by the hypobromite; but with this difference, that the urea is decomposed almost instantaneously, which is not the case with the others. In the conditions of the present analysis, however, taking place instantaneously and in the cold, the error is so slight that it may be entirely neglected.—*London Med. Record*, June 15, 1877.

A New Method for the Quantitative Determination of Sugar in the Blood.

Dr. F. W. Pavy read a paper on the 14th of June before the Royal Society, in which he described minutely his new method for the quantitative determination of glucose, and its application to physiological relations of sugar in the animal system. The accurate results which Dr. Pavy has succeeded in obtaining by means of his new gravimetric process of analysis, and the importance of the subject itself, are such as will tend to advance materially our knowledge, and hence will substantiate and extend the position with regard to the treatment and pathology of diabetes.

The paper consisted chiefly of a description of the method which the author adopted for accurately ascertaining the amount of sugar in the blood of animals, and formed the prelude to one which was read on Thursday, the 21st inst., in which Dr. Pavy gave the results obtained by the application of his method as follows: 1. The natural state of the blood. 2. The comparative state of arterial and venous blood. 3. The spontaneous change ensuing in blood after its removal from the system.

Before describing his own gravimetric system, Dr. Pavy proceeded to criticise Bernard's new volumetric process, which has been described fully in recent issues of the *Comptes Rendus*. This method the author proved to be not only devoid of precision as a quantitative analytical process, but as in itself calculated to give rise to fallacious results, inasmuch as keeping the suboxide of copper dissolved by means of organic matter was fundamentally wrong. The entire system was based on errors, and the results were necessarily incorrect: two of these errors the author dealt with somewhat in detail. The first was in the assumption that the volume of trial liquid corresponds in c. c. with four-fifths of their weights in grammes of the mixture of sulphate of soda and blood. In practice it was found that the actual relation between the volume of liquid obtained and the weight of the mixture employed must vary in each individual case, according to the solid matter existing in the particular specimen of blood and the loss of liquid by evaporation during the separation of the coagulum by heat. The other error in Bernard's method arose from the influence which organic matter exerted in preventing the deposition of suboxide. The large addition of potash which is employed in this process – viz., from 20 to 25 cubic centimetres of a concentrated solution to one c. c. of the copper test—acts upon some one or other of the organic principles left in the liquid obtained from the blood, and prevents the deposition of suboxide of copper.

The author then proceeded to describe his own new gravimetric process, in which he adopts the use of the galvanic battery for effecting the deposition of copper which has been reduced by the sugar in a form to be susceptible of weighing. The details of this method are, shortly, as follows:—

A certain volume of blood—about 20 c. c. forms a convenient quantity—is taken for analysis, and first mixed with 40 grammes of sulphate of soda; the whole must be subjected to weighing in detail, so that the precise weight of the blood taken may be known. To this mixture, contained in a beaker of about 200 c. c. capacity, about 30 c. c. of hot concentrated solution of sulphate of soda are added, and the whole contents heated until a coagulum is formed.

Filtration is then performed, and the coagulum thoroughly washed, so that all traces of sugar may be removed. The liquid thus obtained, from having been run and squeezed through muslin, is slightly turbid, and must be boiled again and filtered through paper to render it perfectly clear. It is now ready for the application of the copper test. Being brought to a state of ebullition, about 10 c. c. of the potassio-tartrate of copper solution, or sufficient to secure that the test liquid is left in excess, are added, and brisk boiling continued for a minute, but not longer. In this way a reduction of the oxide to the suboxide of copper is effected by the action of the sugar present in the solution.

The liquid is then filtered through a plug of asbestos, or, what is better, glass wool. The suboxide, having been collected and washed from excess of the copper test liquid, is next dissolved by a few drops of nitric acid, a small quantity of peroxide of hydrogen having been previously added in order to effect oxidation and consequent ready solution.

The copper present in the liquid is now deposited by the agency of galvanism. The positive pole of the battery is formed by a platinum spiral coil, round which and forming the negative pole is a cylinder of platinum foil; upon this the copper is slowly deposited in a pure metallic form. This operation is continued until the appropriate test shows that the whole of the copper has been thrown down. The period ordinarily required to effect this does not exceed 24 hours.

The platinum cylinder is next removed, and instantly plunged first into distilled water, and then into alcohol. After drying in a water oven it is ready for weighing; the difference in the weight of the cylinder before and after the operation gives the amount of copper deposited.

The battery used is a modification of Fuller's mercury bichromate battery, and has been selected on account of the constancy of its action.

From the amount of copper deposited, that of the sugar existing in the blood analyzed may be accurately calculated. Five atoms of the cupric oxide of the test solution are reduced by 1 atom of glucose; it follows that 317 parts of copper represent the equivalent of one part of glucose, or the relation stands as 1 of copper to 0.5678 of glucose. Therefore, to ascertain the amount of sugar, the weight of the copper has to be multiplied by 0.5678. This application of the copper test solution yields a gravimetric instead of a volumetric process of analysis, and one which has no uncertainty belonging to it. There is nothing for the mind to decide, and no opportunity for error of judgment, as may be the case to a slight extent where a gradual fading of colour—as in the volumetric process—has to be watched until the attainment of a proper point of the decolouration has been effected.

The accuracy and reliability of the foregoing process are strongly supported by the uniformity in the results obtained from a large number of experiments. Compared with the results yielded by this gravimetric process, those obtained by Bernard present the greatest discordancy. The figures he gives are invariably too high, and there is no intelligible relation in the differences noticeable, suggesting that there is something radically wrong in taking decolouration without precipitation of suboxide as a means of estimating the amount of sugar. Dr. Pavy supports this assertion by the conclusions derived from a large number of experiments.—*Lancet*, July 7, 1877.

Materia Medica and Therapeutics.

The Use of Massage as a Surgical Remedy.

A recent number of the *Berliner Klinische Wochenscrift* contains an article by Dr. W. WAGNER on massage, a method of treatment dating as far back as the Greek gymnasts, but allowed to fall into desuetude until quite modern times. Massage, the meaning of which is kneading and rubbing, has been chiefly used for injuries and diseases of joints. It is said to stimulate and increase absorption, accelerate the circulation, relieve pain, and reduce elevated temperature. Billroth recommends massage for the treatment of contusions and sprains during the first four or six hours after the injury, but not during the period of acute inflammation; at a later date, when active symptoms have subsided, it may be persevered with energetically. Dr. Wagner describes four kinds of manipulations connected with massage:—1, *effleurage*, stroking; 2, *petrissage*, kneading; 3, passive and active movement; 4, *tapotement*, tapping or percussion. The first of these, stroking or friction, he asserts to be suitable for the acute stage of inflammation in a joint. The upper part of the inflamed region is to be oiled and then rubbed from the periphery so as to empty the superficial veins and lymphatics. The friction can then be gradually extended over the affected parts, and, this being persevered in, absorption will be hastened

and the swelling and elevated temperature reduced. The pain will also be diminished, as the sensitive nerves will be freed from the pressure on their terminal filaments. *Petrissage*, or kneading, which may be employed for an inflamed joint or other part, should be begun by rubbing with the ends of the fingers or the whole hand, and then pressure should be gradually made according to the firmness of the exudation. Kneading and friction may be combined, and the third and fourth varieties of massage, active and passive motions and percussion, may be employed at the same time. With regard to the cases for which massage is suitable, Dr. Wagner mentions contusions, sprains, extravasations of blood, and inflammation of joints. Massage should be applied as soon as possible, and repeated twice daily. Rest in the horizontal position should be enjoined, and the cure usually proceeds rapidly. The good effects of this method are particularly marked in sprains of the knee-joint. Mastitis also may be relieved by massage. The method is, of course, not available after suppuration has taken place. Massage has likewise been found useful in various chronic affections of joints, in muscular rheumatism, etc. That form of massage which is called *tapotement* has been found to do good in peripheral paralyses and various neuralgias.—*Med. Examiner*, June 28, 1877.

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Santonin.

In a short article on the use of this drug (*Med. Times and Gaz.*, July 7, 1877) Mr. E. MARLETT BODDY says there is no doubt that santonin is, for many reasons, by far the most efficient anthelmintic which can possibly be administered to children, and its combination with calomel he has found to be most advantageous in every respect. Santonin, like every other therapeutic agent, requires care in its administration; and if it is allowed to remain in the system it acts deleteriously, like certain cumulative medicines. This pernicious after-action one of course seeks as much as possible to obviate, and the only way to do so as regards santonin is to combine it with some purgative, such as calomel, which carries it off.

According to Falck of Marburg, if santonin is allowed to remain in the system we get a substance called xanthopsin, into which santonin is supposed to be transformed under certain circumstances which at present are not well ascertained. This xanthopsin is excreted by the urine, giving it a remarkable yellow colour, causing a similitude to that secretion passed in jaundice, and its presence there is easily detected by caustic alkalies, which redden the urine. No doubt it is this xanthopsin which gives rise to those dangerous symptoms that have been so largely dilated on of late, and which many attribute to santonin only, forgetting or ignoring the presence of xanthopsin; and this mischievous action Mr. Boddy has found from experience to be entirely counteracted, or rather prevented, by administering calomel at the same time.

He says: I generally administer santonin combined with calomel, or I give it preceded and then followed by that drug; but one plan is as good as the other. The results of so giving this anthelmintic in either of these two modes have been most happy, and I have very seldom found it necessary to repeat the dose, for such treatment is thorough, and consequently precludes the necessity of repetition.

I myself have never had a case where convulsions or retention of urine have originated from santonin; in fact, I have never seen any untoward symptom resulting from it in any way whatever, which I attribute to my combining it with calomel, or preceding and following it up by that purgative.

My experience has convinced me that nothing of a deleterious tendency can possibly accrue from santonin if it is combined with calomel, for by so doing we do not allow sufficient time to elapse for the xanthopsin to act on the system, for when the santonin has done its work the calomel removes it. The latter drug is a more searching purgative than castor oil; being likewise a cholagogue, it causes a greater secretion of bile, which, as my readers know, is the natural purgative. Giving the santonin in one of these two methods aforementioned will entirely prevent all dangerous symptoms arising; there will be

no convulsions and no retention of urine; nor will that secretion appear like that found in jaundice, for this one simple reason: the santonin, when it has done its work, is eliminated from the system by the calomel, and consequently the poisoned xanthopsin has not sufficient time to form. Perhaps this substance is the cause of patients seeing objects either yellow or green in colour.

Medicine.

Diabetes in Children.

At a meeting of the Société de Biologie (*Gaz. des Hôp.*, No. 44), M. REDON read a communication upon this subject, which, he observes, has been but little investigated. From inquiries he has made among a great number of practitioners, and from his own observations, he has come to the conclusion that the ideas which prevail respecting it are incomplete and erroneous. Basing his observations upon thirty-two cases which he has collected (six of these not yet published), he finds that, while the etiology is very much the same as in the adult, yet the relationship between the diabetes and the various diatheses is brought out more clearly.

Thus, parents the subjects of gout, arthritism, herpetism, scrofula, or certain nervous affections, insanity, convulsions, etc., may either produce children who are all diabetic, or only some diabetic and others exhibiting other forms of vitiated constitution. In more than one-half the cases the disease manifested itself before the ninth and twelfth years. The affection has been so often overlooked that it certainly occurs much more frequently than is suspected, and should be always sought for when a child seems to be suffering from any ill-determined form of disease. It seems to occur pretty equally in children of both sexes. Polyuria is of nearly constant occurrence, the quantity of urine being proportionally greater, as well as the quantity of sugar eliminated. Polyphagia exists in four-fifths of the cases, and wasting is an early and rapid symptom. The pulse is very frequent. The disposition of the child undergoes in the progress of the disease great change; the child from being restless, excitable, and mischievous, becoming dull and taciturn. Complications are of less frequent occurrence than in the adult, probably because of the shorter duration (from some months to two years) of the disease. Dryness of the skin is an extremely frequent characteristic, and this symptom alone may in many cases give rise to a suspicion of this disease. Phthisis, which is usually regarded as a frequent termination of the affection, was only observed in four out of twenty-two deaths, and even in these it was doubtful that it was the cause of death. The children die in a state of marasmus, life being insensibly extinguished, and sometimes there is a state of coma. The prognosis is not so fatal as it has hitherto been considered, for of thirty-two cases at least six were cured—the recovery being always contingent on the prompt recognition and early treatment of the disease. On these conditions a great proportion of cures, which may be rendered permanent by appropriate hygienic measures, may be obtained; while, when the diabetes is overlooked, or only recognized too late, it will always prove fatal. The treatment consists almost entirely in appropriate regimen and hygiene, and should be of the same character as that employed by Prof. Bouchardat for the treatment of the adult.—*Med. Times and Gaz.*, July 7, 1877.

A Case of Enteric Fever treated by Salicylate of Soda.

Dr. MURCHISON communicated to the Clinical Society of London (*Med. Times and Gaz.*, June 16, 1877) the following case: The patient, a labourer, aged twenty, who had always enjoyed excellent health, came under treatment

on the eighteenth day of his illness; he had then had no diarrhœa, nor delirium, and no medical treatment. He had headache, sleeplessness, furred dry tongue, loss of appetite, great thirst, slightly distended abdomen, and slightly enlarged spleen. The bowels were acting about once daily. There were rose spots over the abdomen; the skin perspired freely; the temperature (1.30 P. M.) was 102.5° Fahr.; pulse 100, regular; respirations 26. At 8.15 P. M. the temperature was 104.8°; at 9.30, 104°; and at 10 P. M., 104.4°. He was then ordered the salicylate, twenty grains every two hours, increased, after the second dose, to thirty grains every two hours. At midnight the temperature was 105.6°. At 2 A. M. of next (the nineteenth) day it was 99:6°. At noon, when eight doses had been taken, the patient was rather deaf, and the medicine was ordered to be given every four hours. That day the temperature never exceeded 101.2°; on the whole, the patient was better. At midnight he took the eleventh dose of the medicine. Next day (the twentieth) he took the twelfth dose at 4 A. M.; his temperature was then 99.8°, and his feet felt cold. Shortly afterwards he felt "muddled in the head." At 8 A. M., his temperature being 98°, he took the thirteenth and last dose. An hour afterwards he vomited; his temperature that day never exceeded 100.4°; towards the afternoon he became delirious and at 7 P. M. was very violent, shouting "murder," and insisting that his throat was about to be cut. He had to be restrained by two hospital porters. At 8 P. M., no urine having been passed for twenty-four hours, a catheter was introduced, but only a few ounces of urine came away. This contained one-fourth (in volume) of albumen, with granular epithelial casts and salicylic acid. At midnight he was sleeping soundly and perspiring profusely. On the twenty-first day, at 9 A. M., he was rational; temperature was 103.4°; urine still scanty. At 7.30 P. M. the temperature was 103.6°, and at midnight 104.4°. On the twenty-second day, in the morning, the patient was better, and had no headache nor deafness; he passed only seven ounces of urine in twenty-four hours. There were no rose-spots visible. At 7.30 P. M. the temperature was 105.2°. Twenty-five ounces of urine had been passed in ten hours; the latter portion contained no albumen, but salicylic acid was still found in it. During the next few days the pulse was about 84; the temperature varied from 101.2° to 104.3°. The salicylic acid gradually disappeared from the urine, but a trace of albumen was again found, and then was lost. There was slight diarrhœa. On the thirty-third day the evening temperature was normal. The appetite gradually returned; and the patient left the hospital quite well on the fifty-eighth day. Dr. Murchison remarked that the case was a good one for testing the drug, as there was high temperature without any complication. The effect of the drug was to reduce the temperature as rapidly as it did in rheumatic fever; but when the drug was discontinued the pyrexia returned, and the case subsequently progressed as might have been expected if the salicylate had not been given. The drug induced violent delirium whilst the patient was under its influence; and the delirium ceased as the pyrexia returned, and the effect of the drug passed off. The salicylate further caused albuminuria and almost suppression of urine. Temporary albuminuria had also been frequently seen in patients suffering from acute rheumatism whilst under the influence of salicylate of soda. Probably the cerebral symptoms were due to the suppressed elimination by the kidneys of the nitrogenous detritus of the blood and tissues. The salicylate of soda used in the case had been examined by Dr. Bernays, who had found it to be quite free from carbolic acid. The cerebral symptoms could not, therefore, have been due to any admixture of the drug with carbolic acid.

Dr. Barlow said that, as regarded the albuminuria which was present in the patient, it had yet not been much noted in cases treated with the salicylate. He had recently seen a paper, by a Swedish physician, on the treatment of all pyrexial attacks in children with salicylic acid, and in some of those cases acute nephritis had been induced. In a case of rheumatoid arthritis, similarly treated by himself, albuminuria ensued, with vomiting and some delirium, which latter symptom he had thought was due to the albuminuria. A woman, with a large cancerous wound treated locally with salicylic acid, had also albuminuria produced.

Dr. WHIPHAM had, since January 1 of this year, treated four cases of enterica by salicylate of soda, given every two hours. The temperature fell in these cases. If delirium came on he reduced the doses in quantity and gave them less frequently. In one extremely bad case the salicylate was discontinued, and ether and ammonia were given. The case was complicated with pneumonia, and the patient died. In another case the salicylate was at first given every two hours; the temperature then fell, and the drug was subsequently administered every six hours. A gentleman, treated with the salicylate, had uncomfortable nervous symptoms. A good dose of whiskey being given, the nervous disturbance at once ceased. Another patient treated with salicylic acid, after two days became violently delirious; a good dose of alcohol being thereupon given, took away the delirium at once.

Dr. MURCHISON said that, as to the effect of alcohol given with the salicylate, he was not prepared to speak. In such a case as the one he had described—one of delirium, with almost suppression of urine—he did not think one could have expected much good to come from a dose of alcohol. Besides, there was one particular fallacy possible. In his case the patient was violently delirious, requiring two porters to keep him in bed, and yet, in half an hour afterwards, was quietly sleeping without having taken alcohol or drug of any kind. If the salicylate of soda had been kept up, the temperature would probably not have risen. But Dr. Murchison had wished to see if the disease was shortened by the drug, and he had found that such was not the case. After the temperature had been reduced to the level of health, it rose again at once directly the salicylate was discontinued, as if that treatment had never been adopted.

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Case of Locomotor Ataxy, with Unusual Visual Troubles.

Mr. R. ATKINSON, House-Physician to London Hospital, reports (*Med. Times and Gaz.*, June 16, 1877) the following interesting case:—

J. K., aged thirty, a patient now in the London Hospital under the care of Dr. Hughlings-Jackson, is supposed to be suffering from locomotor ataxy, though he presents several features not commonly seen in that disease. In the following account attention has been chiefly directed to these points:—

The patient has been a ship's steward, and until overtaken by his present malady was always strong and healthy. He is unusually intelligent, and is able to give a reliable account of his symptoms. He says he has never been addicted to sexual or other excesses. In 1871, when at sea, he discovered accidentally that his right eye was almost blind. At this time he could see quite well with the left eye, being able readily to decipher even the smallest type; and he had hitherto experienced none of the symptoms of the disease which was so soon about to attack him. A year later he began to have a distressing sensation of fatigue in his legs and arms, though his work was not unusually severe. At the same time he had difficulty in walking, the right leg being more affected than the left. In 1874—that is, three whole years after his discovery of the blindness of his right eye—he began to have difficulty in seeing with the left. He experienced this first in reading. He could still see fairly well any given word at which he might be looking, but at the same time he could see nothing of the preceding word, and having finished a line he had difficulty in finding the first word in the next line. It may be mentioned *en passant* that these visual troubles resemble closely those complained of by certain hemiopic patients. He noticed himself that he could not see well to the left, and that his visual field was becoming gradually smaller. As he puts it himself, "it crept in and in." He found also that he could not distinguish colours so well as before, dark colours appearing to him the same as black.

The difficulty in walking gradually increased, so that in October, 1874, he could not walk a greater distance than 400 yards without great fatigue. His body seemed to go too fast for his legs, so that the latter had, as it were, to hasten in order to keep pace with the former. A stick was of no use as an aid to progression. He would drop it, and his hands had become so numb that he only knew when this had occurred by falling himself or by hearing the stick

strike the ground. In December, 1875, the disease had so far progressed that he could scarcely stand, and was no longer able to walk at all.

All this time he had severe boring pain in his shoulder-joints, and also in his ankles. He had, in addition, pain in his abdomen—severe twisting, griping pain, as though his intestines were being knotted into a ball.

We venture to add one more trait of the disease. At an early stage of the affection he found that he could no longer guide his pen; but by lashing a stout rough piece of wood to his penholder he was for a time able to overcome the difficulty. Soon, however, this ingenious device failed, and he could no longer write at all. Perhaps this poor man's experience may be of service to others in a similar strait.

On admission, in April, 1877, his condition was briefly as follows: No paralysis of any ocular or cranial nerve. Speech, voice, and articulation good. Pupils equal in size, but larger than normal, and contracting but sluggishly under a strong light. His optic disks were of papery whiteness, and equally so, their surfaces presenting a delicate wavy striation, and their margins being sharply defined. The arteries were somewhat small, but without any obvious thickening of their coats. The veins were not at all tortuous. There was no naked-eye change about the yellow spot. When the patient wished to see the whole figure of any one standing at his bedside he would direct his visual axis not directly towards him, but towards a point on the floor a little to the left (patient's left) of his feet. Should he wish to observe the face more closely he would direct his eyes towards the top button of the waistcoat or thereabouts. On testing his visual field, it was seen that with his left eye fixed on the observer's right eye he could see well large objects in his (the patient's) right upper quadrant, but that he could not see anything in the right lower quadrant, nor in the left half of the visual field, except in a small portion of the left upper quadrant, where he could see indistinctly.

With the right eye he could not see a brightly burning lamp when he was looking directly towards it, but when he looked a little to the left of the lamp he had perception of light. This, it will be seen, coincides, though indeed roughly, with the condition of the left eye. His arms were extremely ataxic. With his eyes shut he could not touch the tip of his nose until after repeated attempts, nor could he with certainty transfer a coin from one hand to the other. Nevertheless, in the performance of coarse movements he showed considerable force. Tactile sensibility was greatly impaired, and he could not feel a gentle touch on either arm. Sensibility to pain was considerably increased, the prick of a pin which a healthy person would scarcely feel at all being to him very painful. He could readily diagnose between heat and cold, and extremes of either affected him very painfully. It was easy, when his eyes were closed, to confuse him as to the relative positions of his legs, which, as to sensibility, were in much the same condition as the arms. He could not walk even a step, but when supported by the back of a chair could stand for a little while.

I have not attempted to enter fully into many of the details of this case except where they differ from what is seen in most cases of locomotor ataxy. Every one who is at all familiar with ophthalmology knows that it is not at all uncommon for amaurosis to be the first symptom of locomotor ataxy, and that one disk may become atrophic years even before the other is affected. Patients thus suffering most usually present themselves for advice to the ophthalmic surgeon rather than to the physician, and it is one of the common tasks of the former to decide whether he has to deal with a case of incipient ataxy or with one of the other forms of optic atrophy.

M. Charcot, in speaking of the visual troubles of ataxics, says that in the amaurosis of ataxy there is a concentric and unilateral limitation of the visual field. M. De Wecker also remarks, "Le rétrécissement du cham visuel s'opére par secteurs." Nevertheless, cases like the present seem to have escaped almost entirely the attention of English writers. Without the ophthalmoscope this case resembles greatly what is seen in hemiopia, though Dr. Hughlings-Jackson mentions one case of hemiopia which terminated in atrophy of the disk. It is the rule, however, to find no coarse change in the hemiopic eye.

It is now universally allowed that in ataxy we have a gray degeneration of the posterior columns of the cord; and if the degeneration can attack the posterior columns, leaving almost intact the rest of the white matter of the cord, it seems quite possible that it may also attack certain sections of the optic nerve in preference to the others.

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A Clinical Contribution to the Study of Post-Hemiplegic Chorea.

Dr. E. C. SEGUIN, of New York, related, at the recent meeting of the American Neurological Association (*Med. Record*, July 21, 1877), the history of two cases. In the first, observed in 1877, a young man of eighteen years suddenly became paralyzed in the left arm, without disorder of sensation. Later, some numbness appeared in the left hand, and in about two months convulsive movements manifested themselves in the left upper extremity. About this time the left leg became affected with weakness and tremor; later still, the lower part of the left side of the face twitched. The arm and leg were the seat of convulsive movements of choreiform type, made worse by emotion or attempt to use parts; no ataxia; sensibility slightly lessened in hand. Later there occurred palsy of third cerebral nerve on the right side; palsy and spasm in left face. Patient died, but autopsy could not be obtained.

Case second was presented to the Association. Its history was briefly this: Male, aged twenty-six years; in April, 1876, sudden right hemiplegia, with partial loss of consciousness and temporary aphasia. During second and third months convulsive movements appeared in the right arm and hand, while great recovery of muscular power was obtained. Partial right temporal hemiopia. Numbness and slight anæsthesia in face, arm, and leg on right arm. A few epileptiform attacks since. Seven years ago had chancres, followed by doubtful secondary symptoms. Movements on right side are now nearly normal in force; while at perfect rest slight oscillations (of paralysis agitans type) occur in fingers and hand. During attempt to use hand violent inco-ordinate movements occur, irregular extension and flexion, of quasi-choreic, quasi-ataxiform type. Partial right hemiopia and hemianæsthesia.

In both these cases the movements, first described by Dr. S. Weir Mitchell, are present; and from the other symptoms present it would appear as if the lesion in these cases had been in the basal part of the hemisphere, just below and posterior to the thalamus opticus, involving, to a certain extent, the internal capsule. In the first case the lesion extended downward so as to involve the crus or the origin of the third nerve.

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A Clinical Account of some Cases of Intra-Laryngeal Growths.

Dr. EBEN. WATSON, Surgeon to the Glasgow Royal Infirmary, and to the Dispensary for Diseases of the Throat, in a clinical account of some cases of laryngeal growths (*Medical Examiner*, June 21, 1877), states that these are by no means of common occurrence in any part of the world; but in Glasgow, perhaps I may say in Scotland, they seem to be peculiarly rare. I myself, though long devoted to throat diseases as a specialty, have only had a very few examples brought under my observation. Considering, therefore, the comparatively greater number of such cases met with elsewhere, I have wondered if it was possible that some instances of this affection might be overlooked with us, or consigned to some other class in the Nosology. For, without considerable skill in the use of the laryngoscope, it is quite impossible to make a satisfactory diagnosis of these cases, and perhaps, therefore, in the hurry of general practice, they may be allowed to pass without due attention. I have ventured to make this suggestion to you here, because, since the establishment of the Dispensary for Diseases of the Throat at the Royal Infirmary, provision is now made for the diagnosis and treatment of all such affections in the case of the poorest of your patients; and I hope you will take advantage of this by recommending them to apply there when you think it desirable.

Without further preface, I now proceed to lay before you notes of three

cases, treated by myself, which I think typical of three important kinds of intra-laryngeal growths.

Case I. *Papillomatous growths from Vocal Cords; Excision of one and Reduction of the other with Nitrate of Silver; Cure.*—This was a very remarkable case of papillomatous tumours upon the vocal cords, which presented itself to me at the Throat Dispensary in February, 1875. The patient was a man of middle age, and his chief complaint was of cough and dyspnœa; but the very peculiar character of his voice at once attracted the attention of all present. The characteristic referred to was that of great roughness or brokenness—if I may use such a word—rather than hoarseness.

The disease had lasted for several months, and was growing worse. It seemed to have originated in syphilis; at least he had contracted that disease about a year previously. By means of the laryngoscope, it was found that each vocal cord was encumbered by a small, elongated, sessile growth. These growths were of a pale-red colour, contrasting obviously enough with the white unaffected parts of the cords, from about the middle of which they sprang, not quite opposite each other, but the one a little in front of the other. Besides, the growth on the right cord was considerably larger than that on the left. This man's throat was very irritable, and it was only after repeated examinations that the above facts were clearly made out. I had the pleasure of exhibiting the case to Drs. Laurie and Lothian, and to a good number of students, both before and during treatment.

This consisted simply of excision by means of Dr. Morell Mackenzie's cutting forceps, which I now show you. You will perceive that the one forceps opens antero-posteriorly, and the other laterally. The former is the one of most general applicability, and is by far the best instrument we at present possess for the removal of laryngeal growths. Well, after some unsuccessful trials, I was able to remove the larger of the two growths previously described, viz., that which grew from the right vocal cord. A good deal of bleeding followed, but was speedily arrested by the local application of the liquor ferri perchloridi. I did not succeed in catching the smaller growth, but I touched it with concentrated solution of the nitrate of silver twice a week till it shrunk away, and was no longer seen. The man was under treatment about two months, and on leaving had still a rough voice, but nothing like what he had at first; in fact, it was comparatively melodious. His cough and dyspnœa had ceased entirely.

I have met with several other cases of a similar kind to that now related, though none of them had proceeded to such an extent. The symptoms in all were much the same, and on examination only a red serration of small outgrowths was seen on the margins of generally both vocal cords. In these cases the application of the solution of perchloride of iron or of solid nitrate of silver as a coating, upon a long probe, has sufficed to remove the disease.

I have been accustomed to think and speak of this state of the cords as probably identical with the granular state of the conjunctiva, which sometimes follows inflammation of that membrane, and I believe that the so-called papillomatous tumours of the larynx are just exaggerations of one or more of the villous projections which have originated in lymphatic exudation beneath the epithelium. In some cases this matter, instead of being absorbed, becomes organized into a neoplasm, which is of the most benign description, and, when removed, has no tendency to recur, except, perhaps, from a renewal of the inflammatory process.

Case II. *Epithelioma of the Larynx; Pulmonary Complication; Tracheotomy; Death nine months afterwards; Inspection of Larynx.*—In this case the patient was a hardy old gentleman, upwards of 70 years of age. He had for some time been subject to cough without expectoration, dyspnœa, and almost complete aphonia. I first visited him along with his medical attendant, on the 6th January, 1875, and on examining his larynx I at once observed a large tumour immediately beneath the left vocal cord. Part of this tumour projected into the rima glottidis, and was of a roundish lobulated shape and of a deep red colour. The motions of the glottis were much impaired, the left valve being altogether prevented from moving. The chest was carefully examined

by several auscultations, and it was found that there was remarkable absence of respiratory murmur, along with great loudness of bronchial sounds. The tone on percussion was not at first perceptibly altered in any part of the chest, but not very long afterwards it became decidedly dull beneath the scapulæ. The expectoration, likewise, became more troublesome, being composed of very tough mucus, frequently mixed with bloody matter.. From the patient's living at a distance in the country, this matter was not examined microscopically, but there seemed only to be blood with the mucus, and no shreds of the tumour.

The dyspnœa and irritability of the larynx increased so much, notwithstanding the careful employment of palliative treatment, especially inhalations of various kinds, that I recommended tracheotomy, and performed the operation on the 11th of March, 1875. The question of thyrotomy had been carefully considered, and at one time I leaned towards its adoption, but finally discarded the idea, owing to the size and nature of the tumour, for I had already decided that it was epitheliomatous; also owing to the doubtful, or more than doubtful, condition of the lungs; and lastly, because of the patient's advanced time of life. The performance of tracheotomy was rendered somewhat more than usually difficult from the highly vascular state of the parts, the thyroid veins being specially enlarged, and also from the partial ossification of the tracheal rings. The relief to the breathing, however, on its completion was immediate and thoroughly satisfactory. The patient was soon able to get out of bed and move about his rooms, and even to walk out of doors when the weather permitted. He enjoyed his food, and, to a limited extent, the society of friends. Thus the summer months passed in comparative ease, but in October he seemed to become worse. He was weaker and more fretful. He rested badly at night, and fell away from his food. Loose flabby granulations appeared around the trachea-tube, but the breathing was never obstructed. He became gradually weaker, and died somewhat suddenly in the end of November. Two days after death I was permitted to inspect the larynx along with my friend, the ordinary medical attendant, and we found it occupied with large sloughs, which were surrounded by masses of epithelioma in a state of softening. The whole larynx was disorganized. The cartilages had been laid bare in the process of softening, and the cords were hardly distinguishable in the morbid mass; but, strange to say, the disease was entirely confined to the larynx, and did not extend below the opening in the trachea, the lining of which seemed free from morbid alteration. Being under promise to that effect, we did not proceed further with the inspection; but I believe, if we had been allowed to do so, we should have found that the cancerous affection had also attacked one or both of the lungs.

In all such cases when the nature of the laryngeal tumour is clearly made out, as in the above case, to be epithe liomatous, I believe it will not generally be found prudent to interfere with it locally. It is, I suppose, abundantly proved in cases more readily and immediately visible that partial ablation of such tumours is worse than useless, and therefore the attempt to remove laryngeal tumours of this kind ought never to be made. By opening the thyroid cartilage in the median line, the diseased parts may, no doubt, be more easily and more thoroughly excised; but, setting aside the very considerable danger of such an operation, I greatly fear if after all the removal could be so perfect as to encourage one to its performance; and I need hardly say that excision of the larynx itself is an operation which is not likely soon to become a favourite with either surgeons or patients in this country. The statistics of M. Paul Berger given in the *Revue des Sciences Médicales* are far from favourable to the operation. Out of nine cases of its performance, six patients died soon after the operation. Of the other three, one was well six months after the incision, and the result in the other two cases was unreported. But, in truth, the great bar to the acceptability of any operation for the removal of epithelioma of the larynx is the same as that which has so long troubled surgeons in regard to the general question of operating in other regions of the body for tumours of admitted malignancy; and I believe that the result of the accumulated experience of all surgeons is that it is hardly justifiable to perform a very severe or hazardous operation for the removal of any such tumour, because of

the liability of the disease to recur, and the trifling extension of life afforded by the best efforts of the surgeon.

Hence I think that when such disease affects the larynx, we probably give the greatest amount of relief to the distress of the patient, and prolong his days to the utmost of our power, by performing tracheotomy fairly below the seat of the affection. By such an operation the tumour is, of course, allowed to remain, but it is freed from the motions of the larynx and the irritation of the passage of air through the narrowed glottis; and thus it is permitted to become chronic, and to pursue a much slower course than before.

Case III. *Epithelial Wart upon left Vocal Cord; Ablation with Mackenzie's Forceps; Cure.*—The patient in this case was a man, æt. 56, who came to the Throat Dispensary a few weeks ago. About ten months previously, he became affected with tickling cough, and soon began to lose the tone of his voice. On his first application at the Dispensary he had complete aphonia, and spoke only in a husky whisper. His general health was good, and he had no pain or uneasiness in the throat, and no dyspnœa.

On examination with the laryngoscope, I found that more than the posterior third of the left vocal cord was occupied by a warty growth, about the size and shape of a pea, but with numerous hair-like projections from its surface. Its colour, too, was remarkable, for it was nearly white, and therefore contrasted very decidedly with the reddened mucous membrane of the glottidean valves; indeed, it had the appearance of being an enlargement of the cord itself. This tumour projected into the rima so as to prevent the approximation of the cords which is necessary for vocalization. Hence it appeared evident that the cause of the aphonia in this case was purely mechanical, for when the man attempted to produce vocal sounds it was seen that the cords were kept separate by the tumour.

I at once endeavoured to seize this tumour with Dr. Mackenzie's forceps, but failed to do so, owing to the great irritability of the throat. I therefore prescribed bromide of potassium in large doses internally, and also in a spray to be inhaled by the patient. Unfortunately at this time he caught cold and the treatment was interrupted. When he again presented himself, his throat was quite as irritable as ever; I twice succeeded, however, in seizing the wart with the forceps, but I seemed to bring away little more than blood. I therefore feared that I had again failed in my attempt to remove the wart; for the bleeding, though exceedingly trifling in amount, obscured the view. However, at his next visit, which was a fortnight after the one just referred to, I had the pleasure of finding, first, that his voice was loud, though rough; and, secondly, that the wart had really been removed. Only a slight roughness or thickening of part of the cord could now be seen, and the two cords were fairly approximated when he made a vocal sound. I again examined the patient a few days ago, and found him still further improved, and speaking with a good strong voice.

In remarking on this case, I would observe that the very great irritability of the throat was the chief obstacle to operative procedure. More or less of the same difficulty is experienced in all cases requiring delicate manipulations in this region, but in the one now related it was present in a very aggravated form. The slightest touch in the throat produced strong and repeated convulsive movements, so that one had to operate by making snatches at the tumour, and as the bleeding soon obscured the view of parts very little could be done at each sitting. Of course, many drugs have been recommended as remedies for this state of things, but I must confess my agreement with Dr. Morell Mackenzie's experience, viz., that none of them are effectual. I have found that careful regulation of the stomach and bowels, and abstinence from food before submitting to the necessary manipulations, are the means most generally useful in allaying this peculiar sensitiveness. I believe that the much-vaunted bromide of potassium has little, if any, special soothing power over the nerves of the throat, and that when it seems to do good it is more by assisting to correct gastric digestion than by acting locally. In some few cases I have obtained benefit from making the patient inhale a little chloroform, but this can only be of limited applicability.

On the whole, rapid and decided action is the best way of getting over the difficulty; though it must be remembered that such rapidity is not free from danger. It certainly requires no inconsiderable skill and experience in the use of throat instruments to be able at all to grapple with these cases of intra-laryngeal growths. Even tumours of the epiglottis and of the aryepiglottic folds, though not nearly so formidable as those further down, are still very difficult likewise for the ordinary surgeon. The parts become so changed in such cases that it is often scarcely possible to recognize them, and, as already mentioned, there are many obstacles to their removal.

In conclusion, I may state that of the cases which have been brought to me under suspicion of intra-laryngeal growths, the majority were really due to œdema of the aryepiglottic folds. This affection may be a chronic one, indeed, it often is so, and it may produce symptoms very like those of laryngeal tumours; for the œdematous folds are constantly drawn into the rima during inspiration, and cause great as well as sudden dyspnœa; and, as the glottis generally partakes of the swelling in some degree, the voice is always more or less affected in such cases. Nothing but laryngoscopic examination can clear up this difficulty and lead to the proper treatment; and I need hardly add that with a little care and patience the diagnosis may be made absolutely certain.

Case of Stenosis of the Orifice of the Pulmonary Artery from Disease of the Valves, probably of Congenital Origin.

Dr. THOMAS B. PEACOCK, Hon. Consulting Physician to St. Thomas's Hospital, Lond., records (*Med. Times and Gaz.*, June 30, 1877) the following interesting case of this:—

G. D. T., a boy, aged thirteen, residing in Wandsworth-road, was admitted into Charity ward, St. Thomas's Hospital, under my care, on July 20, 1876.

No satisfactory history of his previous state of health could be obtained, but he was not known to have ever had rheumatism or any other illness likely to lay the foundations of cardiac disease. He was reported never to have been strong, and to have always been livid in the face in cold weather. He was, however, in his usual health till four months before his admission into the hospital. When admitted his face was flushed and the lips purple. He had much difficulty of breathing, and the face and extremities were puffy, and the abdomen tumid. The urine had a specific gravity of 1025, and was not albuminous. On examination a loud double murmur was heard at the base of the heart, at the upper part of the sternum, and on each side of that bone, and it was the most distinct in the course of the pulmonary artery, where also a very marked thrill was felt. The jugulars were distended, and there was very obvious pulsation of the carotids. The dropsical symptoms became more marked after his admission, and on September 19 the abdomen measured in circumference at the umbilicus 27½ inches, and above that point 30 inches. Two days after, the dimensions were 28 and 31¼ inches, and there was distinct fluctuation to be felt. On October 11 he was tapped, and eight pints and a half of greenish-yellow coloured fluid was removed. The abdomen, however, very rapidly refilled, and on October 27 the circumference at the umbilicus was 30 inches, and above that line 31 inches. In addition to the loud systolic murmur, followed by a slight diastolic whiff, heard over the orifice and in the course of the pulmonary artery, there was also a double murmur audible towards the apex, and a systolic sound in the left dorsal region. The thrill was very distinct over a large space, but was most marked in the second and third left inter-cartilaginous spaces. The abdomen continued to enlarge, and on November 29 the girth at the umbilicus was 31 inches, and above that line 33¾ inches. He was therefore again tapped, and thirteen pints and a half of fluid were removed. On the following day he complained of pain in the abdomen, and soon after he began to sink, and died in a few hours.

On *post-mortem* examination the lower extremities were not materially anasarcous. The peritoneal cavity contained a pint and a half of fluid. The surface was generally opaque and irregularly thickened with a thin layer of recent lymph, and the serous coat of the intestines was somewhat injected.

The capsule of the liver was opaque and covered with rather dense fibrinous layers, and very firm and tough. The hepatic veins were distended, and the surface of the liver mottled. The spleen was much enlarged, and the capsule irregularly thickened, and its substance tough and deeply congested. The kidneys were of their natural size; the capsules were not adherent; their substance was tough and congested. The brain and its membranes were somewhat congested. The pericardium contained eight ounces of clear fluid. The heart weighed about nine ounces avoirdupois. The anterior surface was composed almost entirely by the right ventricle, and the organ measured 42 Paris lines = 94.5 millimetres, or 3.73 English inches, across: and 44 P. l. = 99 mm., or 3.84 E. i., in height. The right ventricle was dilated, and its walls very greatly hypertrophied, being excessively firm and resistent; they measured 3 P. l. = 6.75 mm., or 0.266 E. i., at the base; 2.75 P. l. = 5.17 mm., or 0.14 E. i., at the midpoint; and 2 P. l. = 4.5 mm., or 0.177 E. i., at the apex. The walls of the left ventricle measured at the base 3.5 P. l. = 7.87 mm., or 0.31 E. i.; at the midpoint 5 P. l. = 11.25 mm., or 0 44 E. i.; and at the apex 3.25 P. l. = 7.31 mm., or 2.88 E. i. The right auriculo-ventricular aperture admitted the passage of a ball measuring 42 P. l. = 94.5 mm., or 3.72 E. i., in circumference. The pulmonic orifice was very much contracted from disease of the valves. The three curtains were blended together so as to form a kind of diaphragm extended across the aperture, and protruded forwards in the course of the vessel, and perforated in the centre by a rounded aperture, only admitting the passage of a ball 10 P. l. in circumference = 22 5 mm., or 0.88 E. i. There were the remains of three raphes or cross-bars on the upper aspect of the diaphragm, indicating the former separation of the valves or their lines of incomplete division. The imperfect curtains had deep sinuses behind them, and were very much thickened and indurated. The trunk of the pulmonary artery was of somewhat large size and its coats thick. The heart was otherwise well formed, the fœtal passages, the foramen ovale, and the ductus arteriosus being perfectly impervious. The left auriculo-ventricular valves were opaque and much thickened, and the aperture somewhat constricted.

In the absence of any satisfactory history of the mode of development and the course of the symptoms in this case, it is impossible to say, with confidence, what was the precise nature of the disease of the valves of the pulmonary artery. From, however, the similarity of the condition of the valves to that which obtains in many cases of malformation, and from the extreme rarity of disease of the pulmonic valves in after life, it seems a fair inference that the disease was of intra-uterine origin. If, however, that was the case, the amount of obstruction which existed at the time of birth must have been comparatively slight, or it would almost necessarily have prevented the closure of the fœtal passages. Various cases very similar in character, except that the foramen ovale or ductus arteriosus still remained open, are on record, and of them there can be no question as to the congenital origin; and there are also a few instances in which the condition of the heart was precisely the same as in the present case; and I have not hesitated to regard such cases as instances of malformation.[1] We know that when there is any defect in the conformation of the valves, such defective valves are very apt to become the seat of disease in after-life, so that the constriction, which may have been comparatively slight at the time of birth, often becomes very great, as was probably the case in this instance.

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On the Pulsus Bigeminus.

In the *Berliner Klinische Wochenschrift* for May 14th (No. 20), 1877, Professor Rosenstein, of Leyden, records a case in which this pulse was noted on the sixth day of a pneumonic attack, which ended in red and then gray hepatisation of the upper and middle lobes of the right lung, with fibrinous (plastic) bronchitis, and œdema of the lower lobe of the right and a great part of the left lung. The patient died four days later. In the intervals the pulse-tracings showed first the bigeminal, then a trigeminal and alternating character, and

[1] See "Malformations of the Human Heart," by the author, Second edition. 1866, pp. 120–121.

lastly became quite regular in its character. At the *post-mortem* examination the other organs were fairly healthy, though the heart exhibited a very slight amount of brown degeneration, with pigment-granules. At first sight, says Dr. Rosenstein, the case seems to confirm Traube's view of the fatal prognostic character of the pulsus bigeminus. But since four of the seven published cases[1] turned out favourably, we should scarcely be warranted in so doing. The clinical cases published, and the experiments which support them, do not show that the symptoms of paralysis of the spinal inhibitory centre were present in any one case except Traube's own. The case quoted above shows that the heart regained its normal rhythm just as the control of the spinal inhibitory centre was lost (for the pulse became 100 in the minute, and the temperature was 101.2° F.). Careful consideration of cases of digitalis poisoning and carbonic oxide poisoning teaches a similar lesson. Knoll (*Sitzber. der K. Acad. der Wissenschaften*, Band 401, Abth. iii.) remarks that if the pulsus bigeminus were due to the paralysis of the spinal and the irritation of the intracardial inhibitory centres in poisoning by digitalis, followed by section of the vagi, then the same pulse should be noted when the vagi are cut first, and the digitalis given afterwards. But it is not so. Knoll could obtain this pulse by increasing the intracardial blood-pressure, either directly or in a reflex manner, and this even after the cardiac centre for inhibition had been paralyzed by atropin. So, too, in cases of digitalis poisoning, when the intracardial blood-pressure is increased, which is one of the first effects of digitalis in toxic doses, we find pulse-tracings of this character of pulsus bigeminus intervening amongst the normal curves. It is therefore to be concluded that this character of pulse depends on an increased blood-pressure within the heart, with irregular contractions of that organ. These irregularities consist in the multiplied alternation of strong, abortive, and occasional or intermittent beats of the heart. In other words, clinical experience tells us that the pulsus bigeminus is a variety of the irregular pulse. Rosenstein remarks that the paper of Sommerbrodt in the fourth part of the 19th volume of the *Deutsches Archiv für Klin. Med.* (April 30) had only reached him as he finished the article. But the conclusion as to the uncertainty, in a prognostic point of view, of this pulse, is confirmed by that paper. The dicrotic pulse of some writers is probably a pulsus bigeminus.—*London Med. Record*, June 15, 1877.

Surgery.

The Localization of the Functions of the Brain applied to the Use of the Trephine.

Surgeons should certainly benefit by the recent researches into the nature of the functions of the several portions of the brain, at least of the cortical portions; and although the topography of the cerebral convolutions has been most efficiently studied and mapped out by English and foreign anatomists, it would not appear that before M. Lucas-Championnière first called attention to its absolutely practical bearing, surgeons had made any direct use of these discoveries. Of late several cases have been recorded abroad, by the above-named surgeons, by Proust and Terillon, Broca, and just recently, in a most elaborate and interesting article, by M. Pozzi, in the *Archiv. Gén. de Méd.*, April, 1877. The matter is well worthy of the deepest attention, and we trust may be the subject of patient investigation by our younger surgeons.

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[1] Traube in Berliner Klin. Wochenschrift, 1872. Fräntzel, Henoch, Stricker, in the Charité Annalen, 1876. Rosenstein in Ziemssen's Handbuch (Band 5, fol. 6, of Eng. edition), and Riegel (2 cases) in Deutsches Archiv für Kl n. Med., Band 18.

M. Lucas Championnière, in a communication to the Academy, entitled "Des Indications tirées des Localisations cérébrales pour la Trépanation," called attention to a reliable surgical method for the purpose of detecting cortical lesions. He stated, in the first instance, how he had solved the problem of employing cerebral localizations for using the trephine; the commencement of his studies on this point being the success he had in a case where there was paralysis of some of the muscles of the right upper extremity with aphasia. The patient, who had no external signs of fracture, and was trephined, almost at a venture, with the idea of lesion of the left hemisphere, recovered completely. A fragment of the inner table was extracted with difficulty from the dura mater, and his symptoms gradually decreased. M. Lucas-Championnière considered, as a patient recovered after an operation performed rather by guess, that trephining could be rendered very useful if advantage be taken of the new doctrines of localization.

These cerebral localizations, still but imperfectly understood, yet allow of our knowing that if there exists a convulsion, and, above all, paralysis, of a group of muscles, there also exists some lesion of a motor centre. Since physiology teaches us where these centres are, it should be an easy matter to refer them to their corresponding points in the cranium. But M. Lucas-Championnière remarked, in the first place, that what are termed the cortical centres occupy a space limited to the vault of the cranium, and that all the centres and all the convolutions which form them are grouped around the fissure of Rolando, and immediately below the anterior half of the parietal bone. The method of finding it is thus described: It is known that in man the fissure of Rolando commences fifty-three millimetres behind the bregma, fifty-five millimetres are to be measured behind it and marked on the skull. Next we must measure behind the external orbitar process a horizontal line seven centimetres long, and erect a line at right angles to its extreme edge three centimetres long, and the point thus found will correspond with the inferior extremity of the fissure of Rolando. If, between these two points thus formed, we mark off on the integument a straight line, we obtain the "*line of Rolando*," and if the trephine be applied exactly over this line, the fissure of Rolando is met with invariably. These measurements are rather less in females. The remarkable part of this communication is this, that, thanks to the fact of the motor region being well established, we may safely assume that now-a-days the surgeon is in a position that, given a lesion of a cortical motor centre, he can apply the trephine, and come down exactly upon the seat of this lesion. It must be remembered that, although this method of measurement is true for certain regions, individual convolutions vary somewhat in their positions, and are not always constant towards the vertex, and that the size of the crown of the trephine must be taken into consideration according to the presumable exactness of the diagnosis.—*Lancet*, July 7, 1877.

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Hydrobromic Acid in Tinnitus Aurium.

In a communication to the *British Medical Journal* (June 23, 1877), Dr. Edward Woakes says that hydrobromic acid has established its claim to antagonize the ear-symptoms occasioned by large doses of quinine, and that there appears to be but one step between this fact and the inference that it should be equally efficacious in analogous states of the ear arising from other causes. Viewing certain forms of tinnitus as possessing marked analogy to the condition induced by quinine - one, that is, of congested labyrinthine circulation—I have prescribed certain remedies with a view to the relief of this most distressing symptom; amongst these codeia, with some advantage, but not in any degree comparable to the results attending the hydrobromic acid. It may be needless to remark that the cases should be selected with a view to their appositeness to the presumed physiological action of the drug; and the indication which should be regarded as most distinctly pointing in this direction is that the noises have more or less of a pulsating, or, as the patient will describe it, a "knocking" character. The existence of vertigo if present, will rather confirm the indication for the exhibition of the acid. The subjoined cases are intended

to illustrate these remarks, and are taken from a number of others under recent observation.

F. C., aged 24, was the subject of otorrhœa media, associated with tinnitus of a very distressing character. This latter symptom persisted long after the others had yielded to treatment. The patient, a fairly intelligent mechanic, described the noises as increased on lying down, when they became "like the knocking of his heart." He was ordered fifteen minims of hydrobromic acid in water every four hours. At his next visit, he stated that, after taking three doses, the noises had much diminished, an improvement which steadily continued, so that at the end of a week he considered himself well.

J. T., a chorister, aged 33, presented an acutely inflamed condition of the lining membrane of the middle ear, which projected through a large central perforation of the drum-head. The external meatus was red and tender in its deepest portion, and near the membrane were two granular polypoid growths. There was abundant otorrhœa of a very fetid description. After removal of the growths from the external canal, the subsidence of the inflammatory state of the tympanic cavity, together with the discharge, he still complained of pulsating noises in the head, increased by walking or stooping, headache and occasional giddiness. The hydrobromic acid was given, as in the previous case, with an equally rapid disappearance of all the symptoms associated with the tinnitus.

Two points appear important to secure the success of the drug. 1. The auditory apparatus must be clear of any well-marked objective morbid process. 2. The tinnitus should present the characters of congested blood-supply, already alluded to. In mentioning the foregoing facts at a recent discussion at the Harveian Society, owing to the lateness of the hour, the distinctive indications for the successful administration of the drug were not insisted upon, an omission which, I trust, this communication will sufficiently rectify.

In the same Journal for July 7, Mr. LENNOX BROWNE contributes the following case of the successful treatment of long-standing tinnitus aurium by hydrobromic acid, which well illustrates the principles above laid down. In this case the tinnitus was of the knocking or pulsating kind, and therefore probably due to a congested condition of the labyrinthine bloodvessels. In other cases, in which the tinnitus was of a continuous roaring or rushing character, the administration of hydrobromic acid had no beneficial effect.

J. S., aged 34, applied to the Central London Throat and Ear Hospital on May 11th. He had been deaf and had loud "thumping" noises in the head for twelve years. There was no history of otorrhœa. On examination, the meatus of each ear was fairly healthy; hearing-power was extremely defective; voice was only heard when much raised, and the watch not at all; the tuning-fork was heard on the mastoid process. The tinnitus was complained of as the most distressing symptom. He was ordered benzole-inhalation, and hydrobromic acid in fifteen-minim doses three times a day. On June 4th, he reported that the noises had quite stopped, and said that his ears "felt much clearer and more healthy since taking the medicine."—June 11th. There was no return of tinnitus.

A similar successful result has attended the administration of this drug to a young lady aged 22, suffering from a sense of continuous pulsation in the right ear and deafness, the watch being heard only on contact. The hydrobromic acid entirely removed the distressing tinnitus.

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Recovery from a Wound Perforating the Stomach.

In the *Aerztliches Intelligenz-Blatt* for December 26, 1876, Dr. BRAND of Füssen records the following case. He was sent for on the 22d of July to see a boy, aged 5 years, who was said to have fallen down, and received a wound in the abdomen, from which something was hanging out. On arrival he found that the boy had fallen from a table to the floor with an earthen *pot de chambre*, and had cut himself with one of the pieces of the broken vessel. His father drew the broken piece from the wound. This was soon after supper, and his

stomach must have been pretty full at the time. On examination, a somewhat jagged wound was found on the left side of the abdomen in the lower part of the epigastric region, one and a quarter inches from the median line. The wound itself was almost vertical, and about one and three-quarter inches long. Some great omentum protruded from it. The boy vomited whilst the necessary questions were asked, and part of the stomach, about the size of an apple—about two and three-quarters inches in diameter—was gradually forced out of the wound. In this there was a "solution of continuity" of three-fifths of an inch in length, which allowed food to escape from the stomach. During the vomiting, Dr. Brand kept up gentle pressure on the abdominal walls, then carefully cleansed the extruded part, ligatured a small spirting artery, united the stomach-wound—peritoneum to peritoneum—with a stitch, the end of which, with the ligatures, he brought out at the external wound. Two sutures, passing through the peritoneum, closed the external wound, after careful cleansing. Strips of plaster were also applied. The very patient little sufferer was much exhausted. His skin was cool; his pulse 108. He was put to bed, iced compresses applied to the wound, small doses of opium ordered, and ice to be sucked to relieve thirst. Next day his pulse was 92; temperature almost normal. He felt pretty comfortable. There was slight redness round the wound. In the next few days there was some abdominal tenderness, but not distension: and gradually, with very moderate febrile symptoms, a circumscribed abscess formed from which, after removal of the stitches, on the sixth day, a considerable quantity of good thick pus escaped. At the same time gentle traction removed the suture and ligature belonging to the stomach-wound. All bad symptoms vanished from this date, though some pus was discharged until the 9th of August, when the external wound cicatrized. On August 21st the boy was brought again with a swelling in the old site. Pressure caused a small quantity of pus and *a caraway seed* to escape from the distended cicatrix. Three days afterwards, the wound again healed. After a year, the boy was seen again in good health, not suffering the least from the accident, and it appeared that the stomach was firmly attached to the abdominal wall. The slight nature of the symptoms all through is very remarkable.—*London Med. Record*, June 15, 1877.

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On Symptoms of Strangulation without the Existence of a Hernia.

THEILHABER (*Aertzliches Intelligenz-Blatt*, 7, 1877) says that the peculiar condition of the existence of empty hernial sacs, especially when exudation occurs rapidly in them, gives rise to symptoms closely simulating strangulation of a portion of intestine, and operations have been performed for its relief. There are amongst surgeons diametrically opposed ideas as to the relation between these "empty" hernial sacs and the symptoms of strangulation, and as to the proper method of treatment. He brings forward two cases from his practice. The first was a woman, 42 years of age, in perfect health, who had had for three weeks a swelling in the groin, which at first increased gradually, and afterwards rapidly. During her stay in hospital, all the acknowledged symptoms of strangulated femoral hernia came on, and subsequently the operation of herniotomy was performed; the sac was opened, and a large quantity of a thin flaky fluid came out, which was contained in a cavity, divided by septa into five smaller ones, all intercommunicating. In one of these was a cyst about as large as a bean, containing some bright yellow serum. The sac contained no gut; it became contracted at its neck, and a sound could be passed out from the sac, through the latter, into the abdominal cavity. The interior of the sac was slightly injected. The patient quickly recovered.

The second was the case of a man, 22 years of age, who had, in Aug. 1875, a kick from a horse in the lower part of the abdomen; a swelling appeared next day. It was diagnosed as a hernia, and the man wore a truss until June 8, 1876. When he came to the hospital, he had all the symptoms of a strangulated inguinal hernia, and herniotomy was performed. On cutting through the skin and fascia, on the outer aspect of the spermatic cord, a thick-walled cyst was seen, about as large as a bean, which contained some bright yellow fluid. No

other pathological condition of the cord or canal was found. The patient died the next day. At a *post-mortem* examination, an ulcer as large as a shilling was found at the lesser curvature of the stomach, about 8 centimetres from the pylorus, penetrating the wall of the stomach, and near it the cicatrix of a similar one. There was about a pint of thick pus in the peritoneal cavity; the peritoneum was much injected, containing shreds of coagulated lymph; the spermatic cord was thickened, but no sac was to be found.

The first of these cases authorizes the conclusion that all the complicated symptoms of strangulation can be produced by a hernial sac, which may be destitute of a hernia, although containing exudation-fluid. Theilhaber next quotes a series of recorded cases, where conditions, such as those above mentioned, gave rise to symptoms for which herniotomy was performed.

From an accurate analysis of cases which he brings forward in the paper, it would seem that the symptoms produced by exudation arise from inflammation of the hernial sac; whereas, in cases where old-standing dropsical sacs were found during operation, the sac was uninvolved in the peritonitis, as in the second case under his care. The explanation of the vomiting, constipation, small pulse, etc., in inflammation of the empty sac would, probably, be the same in most cases; the same, in fact, as in other forms of intense local peritonitis. The sensitiveness of the peritoneum remains in the hernial sac, when external to the abdominal cavity, and inflammatory irritation in the same would, by reflex action, affect the nerves passing from the brain and spinal cord to the viscera, as inflammatory irritation of the peritoneum would within the abdominal cavity. It may be that, in some instances, the accumulation of fluid in the empty sac causes the peritoneum, with which the dropsical sac is associated, to be drawn outwards. In a sac thus formed, a knuckle of intestine or a portion of its wall has been included, and in this manner the strangulation, or "kinking," and the subsequent contraction or closure of its lumen, have come about. With regard to those cases in which symptoms reappear after the operation, the first explanation would seem the best; others, where evacuation of the bowels follows shortly afterwards, and the vomiting ceases, etc., seem better explained by the latter theory.

The diagnosis between inflammation of an empty hernial sac and incarceration of a portion of a hernia in it, is naturally of the utmost importance, as in such a case the taxis could only do harm. That the difficulty of diagnosis is no less than its importance, is evident from certain cases which Theilhaber quotes, where it resulted either in exposure or in opening of the sac. With regard to differential diagnosis, the following points should be noted. If the sac be filled only by exudation, its form will be more spherical than in actual incarceration, and the tumour is altogether more evenly tense; and, on percussion, a hollow sound is obtained, which would render the existence of an omental hernia improbable. In the first case, there is more frequently an inflammatory œdema of the integument. The pain is more generally extended, whilst in the latter it is limited to the region of its neck. Theilhaber considers the results obtained by percussion of great value, although they may be deceptive. A sac, containing a small knuckle of intestine and a quantity of fluid, will give a hollow sound; whilst, on the other hand, von Pitha obtained a tympanic resonance in a case of pus in the hernial sac where there was no gut, and he considered that their sound was dependent on the presence of air with the pus.

If the symptoms of strangulation be clearly developed, a communication most probably exists between the inflamed hernial sac and the abdominal cavity. If, on the other hand, the neck of the sac be obliterated, the symptoms are generally limited to local pain, sickness, and feverishness; the more acute peritonitic symptoms being more frequently absent.

He considers that, from the fact of the taxis being frequently unsuccessful, in spite of the communication with the abdominal cavity, we must accept Roser's view, a very probable one, that the exudation has caused a snapping off of the neck of the sac.

The treatment of the inflammation of the empty hernial sac must be immediate, as the application of ice, bleeding, etc.; and, should this be unsuccessful,

recourse must be had to puncture. If the possibility of incarceration be precluded. the tumour must be exposed and incision performed.—*London Med. Record*, June 15, 1877.

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Reduction of Strangulated Hernia.

The reduction of a strangulated inguinal hernia is often extremely difficult, and always requires great tact, even under the hands of the practised operator. It is unnecessary to enumerate the obstacles against which the surgeon has to struggle, while his means of overcoming them have hitherto been limited. Bleeding, antispasmodics, ice, and tobacco-smoke were the remedies formerly employed to mitigate spasm and allay irritation. At a later period recourse was had to anæsthetics. Sir William Fergusson says, "Chloroform is the most potent assistant we possess." But chloroform, though powerful, is not altogether free from objection. It acts irregularly, and in some cases gives rise to a degree of agitation and excitement which may delay or disturb the process of reduction. M. Philippe, of St. Mandé, proposes the hydrochlorate of morphia as a substitute for chloroform. He administers it subcutaneously, in form of injection, and states that it combats pain and spasm more rapidly and efficaciously than chloroform. The solution of hydrochlorate employed contains one part (half a grain) of the salt dissolved in forty drops of laurel water. From six to ten drops of this solution are injected at a time by means of the ordinary hypodermic syringe. Two illustrative cases are related by the author (*Gaz. des Hôp.*, No. 67, 1877). The first was that of a young man affected with inguinal hernia for twelve months. The bowel was protruded during an effort to raise a heavy weight at a time when he had neglected to wear his truss. The surgeon, although present an hour after the accident, was unable to reduce the hernia after diligent manipulation for twenty minutes. He therefore injected ten drops of the solution at the upper and inner side of the thigh. The abdominal and local pains were relieved in a few minutes, but it was still impossible to return the gut. After an interval of ten minutes a second injection (ten drops) was thrown in; this was quickly followed by alleviation of pain in the tumour and abdomen, and on having recourse to the taxis the hernia was returned into the abdomen with great ease. The second case was very similar to the preceding; the general symptoms, however, were much more severe—prostration, deadly paleness of face, pulse very rapid and small, with excessive abdominal pain. The taxis failed, though employed for twenty minutes. Eight drops of the solution were then injected at the upper part of the thigh, but the hernia could not be reduced after ten minutes' manipulation. A second injection of the same strength was therefore thrown in, and then a third and fourth at intervals of ten minutes. Under the influence of the second and third injections some portions of the intestine had been returned into the abdomen, and after the fourth injection the whole of the bowels was easily restored. During the night the patient enjoyed several hours of refreshing sleep. The truss applied was, however, old, and badly made. During the night the bowel came down. The patient vomited several times, and when the surgeon saw him on the next day the taxis was employed without avail. The first injection of ten drops of the solution produced no effect; a second injection made ten minutes afterwards enabled the operator to reduce a portion of the bowel, and after two more injections the whole of the protruded part, save a very small portion, was returned into the abdomen. The operator had now, unfortunately, exhausted his solution. On returning to see the patient late on the following day, he found the latter doing well, but failed to reduce the small portion of bowel which remained extruded. After two injections, repeated at an interval of several minutes, the extruded bowel was returned into the abdomen. The patient soon fell asleep. A proper bandage was applied as soon as it could be obtained, and the patient has had no relapse.—*Medical Examiner*, June 28, 1877.

Cure of a Case of Internal Strangulation by Insufflation of Air.

The following case was communicated to the *Gazette des Hôpitaux*, by M. Roger, of Hede (*Paris Medical*, Feb. 15, 1877). Dr. Roger was called, on the night of Dec. 21, to a patient named F., living about three leagues from Hede, who was suffering from severe colicky pain. On arriving there about 9 the next morning, he found the patient suffering from severe pain in the left side between the last rib and the crest of the ilium. At this point was felt a lumpy tumour, which appeared to contain the arrested contents of the intestine. F. related that, after a meal in which he had eaten a badly cooked dish, he had been seized with nausea, then colic and vomiting. He had not been to stool; the pulse was not frequent; the tongue white. M. Roger prescribed one ounce of castor oil, and then, if the bowels were not moved an enema in the evening. On the 23d the patient was no better; there was no movement of the bowels. He was ordered two drops of croton oil and two enemata of senna and sulphate of soda, at two hours' interval. In the evening there had been no motion; the pain was very severe, especially at times and on pressure. The tumour was still felt, and was harder than on the previous evening. The belly was distended, the pulse slow; the patient had thirst, red face, hiccough, and nausea. More enemata of senna and sulphate of soda were given, and extract of belladonna was applied to the painful part. On December 24, the patient was in the same state. The eructations were less frequent; pulse slow—70. He had no appetite: much thirst; tongue very white. He was ordered a pill of calomel, jalap, and extract of belladonna every two hours. In the evening, his state being the same, insufflation of air by the anus was tried by means of a bellows and gum-elastic canula, which was introduced as far as possible. The air was quietly blown in with rests from time to time, forty strokes of the bellows being given altogether. Slight pain was felt in the left side, but there was some relief. The purgative enemata and pills were continued the next day. No effect was produced, and insufflation was again tried. A great desire to go to stool followed, but nothing passed except wind. Insufflation was again tried, with redoubled energy. The next day a great improvement was manifest. There had been three motions, clear, somewhat abundant, smelling very strongly, and greenish in colour. The abdomen was still distended and there was a little pain. The belly was then electrified, and an enema of mercury ordered. An abundant motion ensued, with a little blood. The next day a glass of castor oil was ordered, which procured three yellowish stools, the first two slightly bloody. From this time the patient gradually recovered.—*London Med. Record*, June 15, 1877.

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Tannin-Collyria.

Dr. Schenkl (*Prager Med. Wochenschrift* and *Schmidt's Jahrbücher*) employs tannin by instillation in various conjunctival affections, using a solution of a strength of one in sixty. This solution should be dropped into the eye three or four times a day. It cuts short the second stage of contagious conjunctivitis, and has also proved of great benefit in severe cases of pannus. Its effects were particularly favourable in all forms of scrofulous inflammation (phlyctenular keratitis, herpes of the conjunctiva and cornea); and he even alleges that photophobia and pain disappeared after the third or fourth application.—*London Med. Record*, June 15, 1877.

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On the Operative Treatment of Internal Piles.

Mr. Thomas Annandale, Surgeon to the Royal Infirmary, Edinburgh, holds (*Edinburgh Med. Journal*, June, 1876) the true principle of operative interference in cases of internal piles to be—to confine the operation to cases in which the disease is uncomplicated with other serious affections, has resisted ordinary treatment, and is causing disturbance to the general health or comfort, either by bleeding or by constant protrusion and irritation, or both.

The principle of the operation itself is to destroy or remove simply, effectually, and without hemorrhage, the vascular growths or masses forming the piles; and in so doing to leave a sore or sores which will heal and contract safely, quickly, and thoroughly.

The advantages of the clamp and cautery (Smith's operation), as compared with the use of the ligature, the two operations at present in general use for the cure of internal piles, are, in Mr. Annandale's opinion, as follows:—

1. By means of the clamp and cautery the piles are at once removed, and do not remain in the rectum as dead and putrid masses.

2. The irritation and pain are not so severe or so prolonged as in the operation by ligature.

3. The patient's confinement to bed and to the house is much shorter.

4. The resulting sores heal more quickly, and are attended with less risk of suppuration and its attendant local and general dangers.

It so happens that I can offer some strong evidence in favour of the clamp and cautery in connection with the amount of pain and irritation following the operation, and the quickness of recovery after it—for, in three of my cases operated upon in this way, the patients had previously undergone the operation by ligature. The testimony of all these patients who had experienced both methods was most strongly in favour of the clamp and cautery.

Mr. Annandale asks, Are there any risks connected with the use of the clamp and cautery? One of the principal objections which has been brought against this method is the risk of hemorrhage after the operation. If the cautery or heated knife be properly used at an almost black heat, and ordinary precautions taken after the operation, I consider that the risk is a very slight one indeed. There has been hemorrhage in only one of my cases—to which I have already referred—and there was good cause for its occurring. Is this operation entirely free from the risk of pyæmia? Cases have occurred, and have been reported, in which fatal pyæmia has followed the use of the clamp and cautery; and I myself have met with one case, which I will briefly relate.

A few years ago I operated on a gentleman, æt. 50, and removed, with the clamp and cautery, three large internal piles. On the fifth day after the operation the patient was out of bed, and appeared to be progressing in every way favourably. On the sixth day he had a rigour. On the seventh day he complained of pain in his side, and symptoms of pneumonia were present. On the tenth day he died, and evidently from acute pyæmia.

Although, therefore, acute pyæmia may follow this operation, I am strongly of opinion that there is less risk of its resulting from the use of the clamp and cautery than from the employment of the ligature. In confirmation of this, I think I am justified in stating, that experience has shown that a wound made—especially in vascular textures—by a heated wire, knife, or other instrument, in operative surgery, is attended with less risk of pyæmia and septicæmia than one made by other means, provided antiseptics are not employed—and the rectum is a situation where they cannot be satisfactorily used.

If the clamp and cautery are used for the removal of internal piles, it is very important that the cautery or other heated instrument should be carefully applied, and at an almost black heat. I have recently employed the thermo-cautery knife in two cases to cut off the piles after they have been seized with the clamp, and I have found it most simple and efficient in its application.

As is well known, internal piles are often complicated with external piles, or with a looseness or redundancy of the skin round the anus—and it becomes a point of considerable practical importance to consider how far such complications should be dealt with when operating upon the internal tumours. When distinct external piles exist along with internal ones, there can be no doubt that the proper practice is to cut them off at the time of operating upon the internal tumours; but, when the condition is simply a general looseness of the skin surrounding the anus, then I think that it should not be interfered with, unless it is very marked. I have seen very troublesome results from the too free removal of such skin, which, when the internal piles are protruded, seem more redundant than it really is. The plan I myself follow is to carefully examine the external parts after the internal piles and any prolapsed mucous

membrane have been thoroughly pushed up into the rectum. If then well-marked external piles or any very redundant folds of skin are present, I consider it a proper case in which to cut them off; but if the looseness or folds of skin are not aggravated, it is better not to interfere with them.

In conclusion, and as a result of my experience, supported by the facts detailed, I would offer the following opinion in regard to the ligature *versus* the clamp and cautery: That, although internal piles may be successfully removed by the ligature, their removal by the clamp and cautery is much to be preferred.

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Spontaneous Elimination of Vesical Calculi by the Hypogastric Region.

The following interesting case is narrated by HENRIETTE in the *Journal de Médecine et de Chirurgie Pratiques*, March, 1877, from the *Journal de Médecine de Bruxelles*. A girl, twelve years old, had, as a result of coxalgia, ankylosis of the hip-joints, which brought the knees so close together that they could not be separated. M. Henriette had ascertained the presence of calculi, but had not operated, as the ankylosis made operation difficult. He endeavoured to dilate the urethra and crush the stone. The first attempt was fruitless, and caused hemorrhage; œdema of the vulva and incontinence of urine followed. Several attempts at lithotrity were followed by the expulsion of calculi, whilst pain supervened, and the urine became ammoniacal. Ultimately an abscess formed below the umbilicus, which opened spontaneously, and gave exit to a large quantity of pus and urine. M. Henriette, being again called to the patient, found in a fistulous opening below the umbilicus a stone making its way out. The child was put to sleep, and, the fistula being lengthened, the stone was removed by forceps. Having introduced his finger into the opening, M. Henriette ascertained that the bladder was filled with concretions. He seized a large calculus, but was unable to extract it without enlarging the fistula. The rest were easily removed by the fingers, a curette, and the injection of tepid water. The next day the child was much relieved, and passed some urine by the urethra. The calculi weighed 45 grammes (695 grains). The child rapidly recovered, and having been in bed about a year, was walking about fifteen days after the extraction of the calculi. The fistula closed spontaneously.—*London Med. Record*, June 15, 1877.

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Internal Urethrotomy.

The treatment of stricture of the urethra is of such importance that any method recommended by experienced operators deserves the most careful consideration. Internal urethrotomy has of late years been advocated in this country for obstinate cases of stricture, especially by Sir H. Thompson, Mr. Berkeley Hill, and Mr. Teevan, and quite recently Dr. Otis attempted to introduce it as a treatment for gleet, associated with slight narrowing of the urethra. Sir H. Thompson, in the last edition of his *Lectures on Diseases of the Urinary Organs*, devotes a whole chapter to the consideration of this operation. He speaks of it as "efficient," "safe," and "certain," as giving "more lasting results than any other" treatment; and he says that out of 200 operations which he has himself performed, he has had only one case of severe hemorrhage, one abscess, two cases of extravasation, one death from disease of the kidneys, and one death from embolism. The operation thus favourably spoken of by Sir H. Thompson, has been extensively practised at University College Hospital, and in the surgical reports of that institution we find some very valuable tables giving us full information about each case of stricture treated in the hospital. Five of these reports have been published, containing details of 217 cases, and it is from these that we have gathered the following facts.

Exclusive of cases of simple incision of a narrow meatus, internal urethrotomy has been performed 68 times; it was followed by death in four cases (5.88 per cent.); fourteen cases (20.58 per cent.) had severe rigors; perineal or penile abscess occurred eight times (11.6 per cent.); severe hemorrhage from the urethra is noted five times, and hemorrhage into the penis once; cystitis oc-

curred in four cases, pyelitis in two, surgical kidney in one, and hematuria in one (source of blood not stated); extravasation of urine followed once; abscess in the buttock twice; chordee twice (which is mentioned as permanent once); and epididymitis or orchitis three times. In one case of penile stricture death was due to septicæmia; in one to surgical kidney and pyelitis; in a third to pleurisy; and in the fourth to general tuberculosis, the stricture in this case being the result of tubercular disease, with contraction of the whole length of the urethra; these last three cases were strictures in the bulbous portion of the urethra. Only the first three of these deaths can be fairly attributed to the operation, and that leaves us with a mortality of 4 per cent. This long list of serious casualties and complications will make surgeons hesitate before adopting largely this operation. It would seem that very few of these accidents could have been avoided; we may say that the cases of extravasation of blood and of urine were the result of too free incisions, and most probably the cases of chordee are capable of the same explanation; but we cannot say this of the five instances of hemorrhage, of the ten abscesses, or of the deaths.

It is generally held that "the nearer a stricture is situated to the orifice of the urethra, the safer it is" to cut, but these tables make it appear that the reverse is the case. In 17 cases the operation was performed for stricture in the penile portion of the urethra, and among these there were 1 death, 4 rigors, 3 cases of severe hemorrhage, 4 abscesses, 1 case of permanent chordee, and 1 case of extravasation of urine. Among 49 cases, where the strictures cut were in the bulbous part of the urethra, there were 3 deaths, 10 rigors, 6 abscesses, 2 cases of hemorrhage, 1 case of chordee, and 3 cases of epididymitis or orchitis. It must also be borne in mind that the latter table contains several cases in which there were strictures in the penile urethra as well as in the bulb; so that, as far as these tables can be taken as a safe guide, it appears that the operation is more dangerous in the anterior portion of the urethra, and that hemorrhage in particular is more liable to occur. In comparing these results with those given by Sir H. Thompson, we must remember that he is speaking of the results of one method of operating—that from behind forwards, which he considers far superior to that from before backwards; but in these tables it is not stated in what way the operation was performed, and here it would have been well if further particulars had been given.

Comparing these results with those obtained by milder methods, we find that in 30 cases, in which gradual dilatation was employed, there was 1 death from pyæmia, 6 cases of rigors, 1 prostatitis, 1 cystitis, 1 orchitis, 1 abscess; and in 87 cases of rapid or continuous dilatation there were 6 deaths, 16 cases of rigors, 4 cystitis, 4 cases of surgical kidney, 2 cases of pyelitis, 2 cases of orchitis, and 1 of extravasation of urine. From this it is at once evident that the treatment by gradual dilatation is much safer than the operation of internal urethrotomy; but the mortality from continuous dilatation is 7 per cent., as compared with 4 per cent. from urethrotomy, the deaths being due in the former cases in 4 instances to surgical kidney, in 1 to peritonitis and diseased kidney, and in 1 to septicæmia. We are able by these tables to compare the cases treated by these different methods in two ways—the size and the age of the stricture. The average age of the strictures treated by gradual dilatation is 7 years, by continuous dilatation 7.5 years, and by urethrotomy 6.6 years. Of 26 cases treated by slow dilatation the average size was 3.6; of 41, treated by rapid dilatation, it was 2.17; and of 53 which were cut it was 2.07. These measures are according to the English standard.

As to the results secured by these different methods, no very useful facts can be gathered from these tables. The size of the urethra when the patients were discharged from the hospital is given; but there is a fallacy in this, for by urethrotomy the urethra is at once incised to the required size, and the immediate results as to patency of the canal are sure to be good, whereas in the more gradual methods of treatment patients are not uncommonly made out-patients before the stricture is quite dilated, the cure being completed after they have left the hospital; and accordingly we find that in 96 per cent. of those who were cut, No. 10 catheter could be passed when they left the hospital, but in only 81 per cent. of those treated by continuous dilatation, and

63 per cent. by gradual dilatation. Of the 170 cases in which the previous treatment is noted, we find that 52 had had no treatment at all, 28 had had "occasional catheterism," 71 dilatation in some form methodically carried out, 9 internal urethrotomy, 6 Holt's operation, 3 external urethrotomy, and 1 caustics. It would be unsafe to draw any definite inferences from these statements as to the permanency of the results of these treatments, because internal urethrotomy is of somewhat limited application at present. It is also agreed by all that regular periodical catheterism is necessary to maintain the size of the urethra after urethrotomy as after dilatation, and it is very possible that after the more general operation greater attention is paid to this by both surgeon and patient than after the simpler mode of treatment.

In conclusion, it would appear from these tables that the milder and gentler the treatment to which the urethra is subjected, the better, and that the complications following internal urethrotomy are very serious and more numerous than after treatment by any form of dilatation. We think that the higher rate of mortality, after continuous dilatation, is probably accidental, and would be corrected by a larger number of cases, because the complications of the treatment are so decidedly less. This is a lesson that Sir H. Thompson has insisted on with great vigour, that the human urethra is a delicate canal, and whenever a surgeon is operating on it in any way he should use all the care and gentleness at his command.

We think the statistical reports published by so many of the London hospitals would be greatly enhanced in value if they contained tables such as those which have furnished us with the above details, and we hope the registrars will adopt the suggestion.—*Lancet*, June 23, 1877.

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Nerve-Stretching in Sciatica.

Encouraged by the success which followed the performance of this operation by Mr. Lister in a case of severe sciatica, Mr. JOHN CHIENE, Assistant Surgeon to the Royal Infirmary, Edinburgh (*Practitioner*, June, 1877), made trial of it in two cases which were lately admitted to the surgical and clinical wards in the Edinburgh Royal Infirmary. A short narration of these cases may be of interest. Before doing so, it may be well shortly to describe the operation as recommended by Professor Nussbaum, of Munich, who first introduced this method of dealing with large nervous trunks the seat of severe pain. The brachial plexus, the sciatic and anterior crural nerves, have been stretched. The nerve is exposed by incision and hooked up, in the case of the sciatic, on the finger of the operator. It is forcibly pulled, first proximally, and then distally; the limb of the patient is then lifted from the table by the sciatic nerve.

1. Bernard Lamb, aged forty, furnace-man. He states that he began to complain of pain in the right leg five years ago. The pain ran down the back of the thigh to the knee; latterly pain was felt in the calf of the leg and ankle. The pain was severe and constant, and was most acute when he walked or worked. About two years ago the muscles of the limb became defective in power; in October last he had to give up work altogether. Various remedies were tried without any good effect. On admission to the medical wards on the 10th of March, 1877, he required to use a stick to support himself, and dragged his leg after him. When in bed he could not raise the affected leg from the bed, and when shifting his position he required to use the sound leg to move the affected limb. In the medical wards galvanism was made trial of, with quinine and bicarbonate of soda internally. These remedies were followed by little or no improvement.

On the 12th of April he was admitted to the surgical wards. The affected thigh measured at its middle one inch less in circumference than the sound leg at a corresponding point. There was no difference in the calves of the legs. On the 19th of April the operation was performed. Chloroform was administered, an incision three inches long was made over the course of the sciatic nerve as it emerged from under the fibres of the gluteus maximus. The nerve

was exposed and lifted up upon the finger. It appeared normal. The nerve was then forcibly tugged from above downwards, and from below upwards, and the limb was then lifted from the table by the nerve. The wound was treated antiseptically, and a catgut drain introduced to insure free drainage. On the following day the patient said he had not been so well for years. The pain was completely gone, and he could now lift his leg from off the bed without any difficulty. He was out of bed in a fortnight, and walked about the hospital without discomfort. He expressed himself as daily getting stronger. On Wednesday, May 9th, he went out for a walk in the town and returned, saying that he was better than he had been for years. On the following day he ran down stairs to show how nimble he was. He was dismissed on the 11th of May, 1877, feeling perfectly well.

2. Thomas Buchanan, aged forty-one, furnace-man, was admitted to the clinical surgical wards on the 20th of April, 1877. He states that he began to complain of severe pain down the back of the left thigh in June, 1876; since that time the pain has gradually increased in severity. He managed to work half-time until February, when he had to give up work altogether. The following treatment had been tried without any effect: Fly-blisters, injections of morphia, turpentine internally, acupuncture, dry cupping, wet cupping, and Corrigan's cautery.

The pain is now very severe and paroxysmal; he complains also of numbness in the affected limb. He is afraid to move or turn in bed, as the slightest movement brings back the pain. Careful measurement showed no difference in the size of the limbs.

The nerve was stretched on the 23d of April. The only difference from the operation in Lamb's case was that the nerve was exposed lower down the thigh, in order to simplify the application of the antiseptic dressing. When the nerve was exposed it appeared fatty, and large tortuous veins ramified over it. In attempting to lift the limb from the table—the man had a very muscular thigh—the nerve stretched to such an extent that I felt sure that I had torn it in whole or in part. On the following day, however, sensation and motion were unaffected, and the man said he had not been so comfortable for months; he could now move his leg in any direction without the slightest pain. His progress was uninterrupted. He was out of bed, and the wound healed, on the 10th of May. He can walk without any pain, and says that he feels in every way well, with the exception of a small, slightly painful point on firm pressure behind the trochanter. He considers this slight pain as of no consequence. A needle was introduced at the painful point, and the patient dismissed on the 11th of May, 1877.

Remarks.—When we remember that a portion of the affected nerve has repeatedly been excised in severe cases of neuralgia with only temporary relief, we may well doubt the permanency of the cure in the cases just related. Both men state that even if the relief afforded only lasted for a fortnight, they would willingly again submit to the operation, from which they had suffered no inconvenience. This may, to a certain extent, be due to the marked painlessness of antiseptic wounds, but at the same time there is little doubt that the after-inconvenience is less than if the actual cautery had been applied. The scar which remains is certainly less disfiguring, a matter of little importance on the back of the thigh, but of considerable import in neuralgia of the branches of the fifth pair, in which I think stretching of the affected nerve should certainly be made trial of.

Both men were well developed, tall and muscular, both furnace-men, exposed to great alternations of temperature. They both state that sciatica is common amongst their fellow-workers, and that the left leg is almost always affected. The explanation they give of this fact is that this leg is stretched during the act of heaving coals with a shovel into the furnace.

This point is of some interest, and worthy of further elucidation by those who have opportunity. If true, it evidently points to stretching of the sciatic nerve, probably as it passes out of the sciatic notch, as one cause of sciatica.

It will be noticed that Bernard Lamb's right leg was the seat of pain. *He is left-handed*, and works in the opposite way from his fellow-workmen.

It is, in my opinion, difficult to explain the *rationale* of this treatment. We require more exact data regarding the minute pathological anatomy of the sciatic nerve in sciatica. Rokitansky speaks of neuritis as one cause of sciatica. The result of chronic inflammation will be the formation of adhesions and inflammatory thickenings of the neurilemma pressing on and irritating the nerve fibrils. In all probability the result of the severe stretching will be a breaking down of these adhesions, removal of pressure from the nerve, and its restoration to its normal functions. When we notice that the relief is immediate, and that there is no interference either with the sensory or the motor elements of the nerve, we must, I think, come to the conclusion that there is no rupture of the nerve-tissue proper, or conducting part of the nerve, but that the stretching acts on the neurilemma, or insulating portion of the nerve. Another explanation may be that the operation acts as a severe counter-irritant. The powerful counter-irritants used without effect in Buchanan's case militate against this idea. The question is still *sub judice*, and more precise pathological data are required before we can come to a conclusion. A longer time will require to elapse before it can be said that the benefit of the operation is permanent.

Midwifery and Gynæcology.

Rupture of the Uterus without Symptoms.

Mr. RICHMOND LEIGH, Assistant Medical Officer to the Lying-in Hospital, Liverpool, reports (*Lancet*, July 7, 1877) the following remarkable case:—

Mrs. G. began to be in labour with her ninth child about 2 P. M. on February 26th. About 10 P. M. I was sent for by the midwife who was attending her, on account of the labour not progressing, as, according to her account, the child had been in the same position for about five hours. On examination, I found the breech of a female child presenting at the brim of the pelvis, the pains strong, yet failing to cause any advance. Placing my hand upon the abdomen, I was surprised to feel an arm of the child, as it were, beneath the abdominal wall, the fingers even being quite distinguishable, so plainly could it be perceived. The probability of rupture of the uterus immediately presented itself to me, although there were no symptoms of collapse (save the pulse being small), the pains continuing vigorous. I attempted to bring down a foot, but the strength of the pains and the position of the child—wedged, as it were, in the brim of the pelvis—prevented my succeeding. Dr. Pierce (whom I had sent for) therefore administered chloroform, and I then succeeded in bringing down first one foot and then the other. There was some little further difficulty in bringing down the arms, which had passed up on either side of the head; and, finally, the forceps had to be applied and considerable force used to deliver the head.

The pains continued good to the termination of labour, and the placenta came away easily. On now examining, a rent in the lower and anterior part of the uterus was found, through which the hand could easily be passed and the uterus grasped in the abdominal cavity. The rupture was transverse, and situated a little above the os, thus leaving the body of the womb entire. The arm had evidently escaped through the rent, the head remaining, and the position of the tear permitted uterine pains to continue. The intestines did not come down, nor were they even felt by me. The uterus contracted fairly, without much hemorrhage. A binder with compress was firmly applied, opium given freely, and brandy in small quantities repeatedly. There was still no collapse.

The next day (27th) she expressed herself as feeling tolerably well, but a chronic bronchitic cough troubled her a good deal, and she vomited occasionally. There was pain in the abdomen, but not much tenderness, and the lochia

were moderate. A small quantity of urine was removed by the catheter, and bismuth solution and hydrocyanic acid ordered with the opium.

28th. Vomiting ceased since last night; tongue brownish and dry; slightly delirious; has passed urine; breathing short and quickened. During the day, contrary to instructions, she was moved to "change the bed," after which considerable hemorrhage occurred. In the evening she was much lower, "pain had gone," and the breathing was very short and quick.

March 1. Died at 4 A. M.

This case is remarkable in several respects, chiefly in the absence of symptoms of collapse and the continuance of the pains till the completion of the labour. I was with her over an hour and a half, and the rupture may have occurred several hours earlier. On inquiring into her history, I found that her previous labours had been normal, but tedious. About four months ago she had hurt herself lifting a mangle, but was not laid up by the injury. Possibly this may have caused some inflammatory change or adhesions, and thus have been the cause of rupture when labour came on.

I obtained a partial *post-mortem* examination, and found the rent lying open, the body of the uterus fairly contracted, but drawn away from the lower margin of the rupture. The uterine substance was normal, but the upper part of the vagina was more fixed than usual, and there was some recent effusion of lymph. From the hurried and limited examination allowed, I was not able to do it satisfactorily.

The rupture was about the junction of the upper two-thirds with the lower third of the uterus.

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Gastrotomy successfully performed in a Case of Rupture of the Uterus.

Dr. HART, of Nieuwer Amstel, in Holland, relates (*Nederlandsch Tijdschrift voor Geneeskunde*, 1876. No. 42, 1876) a case of spontaneous rupture of the uterus, in which the patient's life was saved by gastrotomy. She was thirty-seven years old, and was the subject of pelvic contraction. The conjugate diameter was at most 7.9 ctm. (3⅛ inches), the promontory of the sacrum being easily reached by the finger. Of three previous labours, the first had been completed naturally after lasting for three days. In the second and third the fœtus was extracted with difficulty by forceps. In the fourth pregnancy, labour proceeded until the os was fully dilated, and a segment of the head was engaged in the pelvis. Dr. Hart was about to terminate the labour by forceps, when suddenly, as an examination was being made, violent uterine action took place, and considerable hemorrhage occurred from the vagina, after which all pains completely ceased. The fœtus gradually receded, and after a few minutes was out of reach, slight sanguineous discharge continuing. The pulse rose to 100, but remained full. The moment at which rupture took place was about five hours from the time when the patient had been first seen, and the os found to be dilated to a diameter of 4.5 ctm. (1¾ inches), the liquor amnii having escaped.

Professor Simon Thomas was called in in consultation, and discouraged any interference, but Dr. Hart nevertheless resolved to perform gastrotomy, and the patient accepted this operation. It was carried out about nine hours after the rupture, Dr. Hart having been obliged to defer it in order to perform craniotomy in another case. The pulse had then risen to 126, and there was severe abdominal pain. The fœtus and placenta were found to be completely in the peritoneal cavity, the former lying in a dorso-anterior position. The uterus was firmly contracted. In the supra-vaginal portion of the cervix, at the anterior part, was a transverse rent 3 ctm. in length. As no bleeding was taking place, and there was no sufficient space for sutures between the rent portion of the uterus and the bladder, no sutures were employed, but the pelvis was carefully sponged out. Convalescence was uninterrupted, the temperature never rose above 38° C., and the patient was able to go out of doors thirty-three days after the operation. The author contrasts the success of this case with a series of thirteen cases of rupture of the uterus collected by Professor Lehmann. In none of these was gastrotomy performed, but in most the fœtus

was extracted by version or forceps. All the patients died within a few days. —*Obstetrical Journal of Great Britain*, June, 1877.

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Tarnier's Forceps.

In a recent brochure (*Description de Deux Nouveaux Forceps*, Paris. 1877), Prof. TARNIER describes his favourite form of forceps, which have attracted much attention in France, and have been received with approval by some authorities of repute as likely to supersede the instruments now in general use. Prof. Tarnier enumerates a series of grave defects in the common long curved forceps. They are as follows: 1. That they *never* permit the operator to make traction in the axis of the pelvic canal. 2. That they do not leave the fœtal head sufficient mobility to allow it to follow freely the curve of the pelvis. 3. That they are not provided with any indicator to show the accoucheur in which direction he ought to make traction. For his own instrument he claims in contradistinction the following qualities: 1. That it permits the operator always to make traction in the axis of the pelvic canal. 2. That it leaves the fœtal head mobility enough to allow it to follow freely the curve of the pelvis. 3. That it provides an indicator which shows the accoucheur the precise direction in which, at each moment, he ought to make his traction. It is supposed throughout that the patient is in the dorsal position, which in France is usually adopted for the application of forceps. Prof. Tarnier then assumes that the direction of resultant traction is necessarily in the same straight line with that of the resistance, and not merely parallel to it; that is to say, that it is in a line passing through a point near the end of the handles, and through the centre of the fœtal head. On this assumption he has no difficulty in showing that, if forceps are applied to the fœtal head at the brim, and a traction force of 20 kilogrammes is exercised, the effective force tending to cause advance of the head is only 17 kilogrammes, while a useless and injurious pressure of at least 10 kilogrammes is exercised upon the anterior pelvic wall. The same relation holds also in whatever part of the pelvic canal the head is situated, unless the handles of the forceps are so depressed that the direction of the blades deviates from that of the pelvic axis, and a hazardous pressure is exercised on the posterior vaginal wall or perineum.

There can be no doubt that this criticism upon the curved forceps is, in a measure, just; but the case is stated more strongly than the facts justify. For if the patient be placed in the left lateral position, as is usual in England, it may be mathematically demonstrated that it is theoretically possible to make traction precisely in the axis of the brim, or of any other part of the pelvic canal, although there may be practically much difficulty both in judging exactly the direction of the axis in which the head should advance, and in so adjusting the traction that the resultant force acts in that direction, supposing it to be known. For let us suppose that the operator grasps with his right hand the handles of the forceps, while his left hand seizes them near the position of the lock, either two fingers being rested on the flanges, as in Simpson's forceps, or one finger passed through the space between the shanks, as in those of Lever or Barnes. If he is well instructed, the right forearm will be nearly in the line of the handles, while the left is inclined to it at an angle of about 60°. The line, then, in which traction can most naturally and easily be made is that which bisects the angle between the arms, and is directed straight to the operator's chest. This line is inclined at an angle of 30° to the handles, and is, therefore, precisely the desired direction, namely, that of the blades, which is the same as that of the axis of the pelvis where it passes through the centre of the fœtal head, if the forceps are rightly applied. If, however, both hands made parallel traction in this direction, the effect would be to carry the handles of the forceps backward, unless resisted by the perineum. If this tendency be resisted by carrying one hand, or both hands, more forward, the resultant traction would deviate into the vicious direction which is denounced by Prof. Tarnier. If, however, as the traction of the right hand is inclined forward, the traction of the left hand is, in equal degree, inclined backward,

the resultant effect is no longer a single force, but a force combined with what in mechanics is known as a couple. The resultant force is parallel to the proper axis of the pelvis, and wholly effective in advancing the head, while the couple maintains the forceps in the right position, and no useless pressure is exercised. The left hand does not counteract the effect of the right hand in keeping the handles forward, because the latter has a greater leverage. It may be objected that the great majority of accoucheurs have never studied the mathematics of couples, and that probably many of them have never even heard of the word "couple" as a term in mechanics. Fortunately, however, provided the operator has his arms in the right position, makes his resultant traction in a line bisecting the angle between them, while at the same time, with his right hand, he keeps the handles sufficiently forward, he cannot fail to produce the desired effect, without any regard to theoretical mechanics.

In the dorsal position of the patient this mode of traction would seem to be somewhat difficult to execute. We learn, however, from a criticism by Prof. Pajot upon Prof. Tarnier's work, published in the March number of the *Annales de Gynécologie*, that he is in the habit of teaching it, directing that the right hand should be raised, while the left hand, grasping the forceps at the lock, is depressed in corresponding degree. In his original memoir Prof. Tarnier had entirely overlooked this mechanism, and, in his answer to Prof. Pajot (in the April number of the *Annales de Gynécologie*), he has as completely misconceived its nature, supposing that the right hand is to push in the *opposite* direction to the traction made by the left. Thus he concludes that a force of 60 kilogrammes has to be exercised to produce an effective traction of 20 kilogrammes. That a loss of power does take place is undoubted, and its amount can easily be calculated. Taking Prof. Tarnier's diagram as to the dimensions of the forceps, and supposing the two arms to draw with level force, the traction of the two hands should be inclined about 40° right and left of the middle line (the exact angle is $\tan^{-1}.\frac{4}{5}$), and the force expended is to the effective force in the ratio of about 13 to 10.

Having said thus much in vindication of the possibility of so making traction with the ordinary forceps that no useless pressure is exerted, we must admit that, besides the loss of power involved, the mechanism is a difficult one fully to carry out. Probably in most cases it is but incompletely put into execution, and some degree of excessive pressure is put upon the anterior pelvic wall. And in difficult cases, when the operator has to put out all, or nearly all, his strength, he will be likely to pull almost in the same direction with both hands, and thus the direction of the force will be most faulty just when it is most important that it should be accurate. The plan, therefore, by which Prof. Tarnier proposes to avoid this defect is deserving of the most careful attention. His instruments consist of two parts; first, a pair of prehensile branches, which resemble ordinary forceps, except that the handles are curved backward, so their extremity lies in the prolonged axis of the blades—that is to say, in precisely that axis of the pelvis in which traction ought to be made. These are not to be used for traction, but simply grasp the head, and are held together by a screw. The second part consists of two traction rods, which are articulated freely at a joint near the lower part of the fenestræ, and in the axis of the blades. These are not crossed, but parallel; they have the same curve as the prehensile branches, lie close beside them when in position for traction, and end in a strong transverse handle, which gives a powerful hold to the hands. The whole instrument, when seen from the side, has thus a sigmoid curve. Each traction rod is introduced together with the corresponding prehensile branch, and the adjustment is said to be as easy as with the ordinary forceps.

The author claims that the prehensile branches allow the head to move freely along the pelvic curve, and serve as an indicator to show precisely to what plane of the pelvis its centre has reached. Such an automatic indicator is no doubt highly desirable, if it can be procured, and it is important to examine how far the author's ideal is attained. The first requisite of an indicator is that it shall not, by its own weight or inertia, modify the condition which it indicates. Now, the weight of the prehensile branches, even if lightly

made, cannot but be worthy of some consideration; and this weight, situated upon the long arm of a lever, acts at a mechanical advantage of at least four to one against the friction upon the sides of the head which is to prevent the indicator dropping below its proper position. And against the forces tending to produce the normal extension of the head, in opposition to the weight of the prehensile branches, the patient being in the dorsal position, the mechanical advantage is far greater. Moreover, if the extremities of the indicator once became by this means directed too posteriorly, the force exerted upon the traction rods, being displaced in equal degree, would tend to perpetuate and increase the error. Hence with Prof. Tarnier's instrument there would seem to be a risk of exercising undue pressure on the posterior wall of the pelvic canal. It is to be remembered, moreover, that the expulsive force itself exercises undue pressure on the posterior wall, and that even with the ordinary forceps injuries to the perineal body are common, while lesions of the anterior wall, in the shape of vesico-vaginal fistulæ, are very rare. It appears to us, therefore, that the tempting idea of obtaining an indicator of the movement of the fœtal head is delusive, and that the operator does best to trust to his own skilled judgment as to the direction of the axis of the pelvis at the point where the centre of the fœtal head is situated. Even though his result is only approximate, it can scarcely fail, in the lower part of the pelvis, to be much nearer the desired direction than the natural expulsive force.

The other part of Prof. Tarnier's object—namely, to afford a ready means of making traction precisely in the direction of the axis of the blades at any part of the pelvic canal—remains of the highest importance. Attempts have previously been made by two Belgian obstetricians, Huberts and Moralés, to construct an instrument fulfilling this requirement, and the forceps of the latter appear to be very well conceived. Prof. Tarnier points out, however, that the backward curve given to the handles is not quite sufficient to bring them into the same line with the prolonged axis of the blades. His own second variety of forceps would seem to fulfil the conditions in a simpler manner than his more complex instrument. In this the handles are curved backward until they reach the prolonged axis of the blades, and are there jointed to a movable straight portion in the same straight line with that axis. This can be reversed or fixed transversely, and in the latter position affords an admirable hold for traction. The author proposes, even with these forceps, to carry out his favourite idea of affording an indicator, and allowing mobility to the fœtal head. This he does by dividing the fenestræ by a diagonal bar. This affords a hold to loops by which traction is to be made in the axis of the blades, instead of by the handles. This plan appears to be still more open than the other instrument to the objections which we have already noted. As regards its shape, however, we think that this form of forceps is well worthy of the attention of British obstetricians. Prof. Tarnier's whole work should be read by all who take an interest in the mechanism of delivery. It is illustrated by forty-three admirable engravings, which show in the clearest manner the various mechanical points involved, as well as the various forms of instrument which have been devised by the author and his predecessors.—*Obstetrical Journal of Great Britain*, June. 1877.

In a communication to the *British Medical Journal*, July 7, 1877, Dr. Lombe Atthill, Master of the Rotunda Hospital, Dublin, says "We have employed Tarnier's new forceps on several occasions recently in this hospital: 1. In cases of ordinary tedious labour, when the head was low in the pelvis and the delay due to inertia; 2. In a case of tedious labour where, the pelvis being well formed, we deemed it necessary to effect delivery while the os was still but two-thirds dilated and the head above the brim; 3. In a case where the base of the skull was arrested at the brim, the conjugate diameter being lessened by the undue projection of the promontory of the sacrum. This woman had on two previous occasions been delivered in the hospital with the long forceps; and on the present occasion no advance had been made for nine hours, though the pains were incessant and powerful. It is, therefore, evident that we have fairly tested the instrument.

"We have arrived at the conclusion that the instrument possesses the ad-

vantages claimed for it by Dr. Tarnier, and which he points out as being essential to a perfect forceps. 1. It admits of traction being made in the axis of that portion of the pelvic cavity which the fœtal head at the moment occupies. 2. It possesses an indicator capable of pointing out the direction in which traction should be made. 3. It permits the head to rotate as it descends. This last point was clearly demonstrated in the case of difficult labor alluded to above. The head lay at the brim in the third position. If we apply Barnes's long forceps to the head when in that position, we generally find that it is born face to pubes. In this case, however, while extracting with Tarnier's forceps, the head rotated and was born in the second position. We also are of opinion that less force is needed when extracting with these than with ordinary forceps. But, while thus admitting that Tarnier's forceps possesses the advantages which its inventor claims for it, it has also certain disadvantages which to a great extent counterbalance them. Of these the most important is, that the pressure of the prehensile blades on the fœtal head is regulated by a screw; and, the amount of pressure which should be employed being a matter of conjecture, if the blades be not screwed sufficiently tightly together, they slip off the moment traction is made, and have to be loosened and reapplied, which, in consequence of their complicated mechanism, is a little troublesome; while, if the screw be turned a little too much, the life of the child is endangered from the effects of undue pressure. Moreover, in Tarnier's forceps the pressure exercised by the blades is never relaxed, as is the case when the English instrument is used; for every experienced operator permits the handles of the instrument to separate a little in the interval when he ceases to make traction, and, by so doing, relieves for the moment the head from pressure. Next, the instrument, in consequence of its construction, is not so easily applied as the English forceps. Doubtless, in skilled hands, this is a matter of little moment; but to others it would prove a serious drawback. The price, too (£2 16s.), is a bar to its being generally purchased. In fact, I believe the instrument to be a good one as a tractor, but am satisfied that it never will be in this country a popular one."

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Epithelioma of the Cervix cured by the Injection of Chloride of Zinc.

Dr. GUICHARD relates (*Annales de Gynécologie*, Feb. and March, 1877) a case of epithelioma of the cervix uteri in which, by means of a syringe, injections were made into the cervix of a solution of chloride of zinc of the strength of one in five. The patient had been wasting for seven months, and had suffered from metrorrhagia for four. The anterior lip of the cervix was increased in volume but free from disease. The posterior lip was the seat of a cauliflower excrescence, the base of which was indurated. The uterus itself was movable, and did not appear enlarged.

The cervix was exposed by Sims' speculum, and injections made at several points on each occasion. The point of the syringe was inserted to a depth varying from 5 mm. to 1 ctm., and about five drops of fluid were injected at each spot. The duration of treatment was one month. Injections were made at five sittings, at intervals of from five to six days. After the morbid growth had sloughed away, and there was danger of injuring the peritoneum by introducing the syringe any longer, the caustic was simply applied to the raw surface on several occasions. The inflammation produced was very limited, and there was no febrile reaction, a result which the author attributes to the property which the chloride of zinc has of coagulating instantly blood and lymph, so that no caustic liquid could be conveyed by the lymphatics to the peritoneum. At the end of the treatment the posterior lip of the cervix was replaced by a cicatrix which made scarcely any prominence. After the lapse of a year there was no sign of recurrence, and the patient was in good health.—*Obstetrical Journal of Great Britain*, June, 1877.

Dilatation of the Cervix Uteri for the Arrest of Uterine Hemorrhage.

Dr. GEORGE H. LYMAN, of Boston, at the late meeting of the American Gynæcological Society (*Am. Journal of Obstet.*, July, 1877), read a short paper upon the above subject, in which he presented the claims of dilatation of the cervix uteri as a means for arresting uterine hemorrhage, and related cases in which the means had been adopted with advantage. The dilatation had been performed for purposes of diagnosis, and so marked had been the relief from the hemorrhage, which had been the alarming symptom, that special attention had been aroused to the dilatation as a means for its arrest. The first case was one in which there was a small fibroid on the upper part of the cervix; it had been attended by profuse and frequent hemorrhages. Dilatation by means of a tent was followed by immediate subsidence of the hemorrhage, and the subsidence continued for several months. The second case was one of metrorrhagia occurring in a woman 28 years of age, and in whom no deviation from the normal condition in the uterus could be found. She was liable at all times to sudden gushes of blood. Dilatation was followed by immediate relief; her periods became regular and the flow normal. To the third case not much importance was attached. The fourth case was one in which menorrhagia was present, dependent upon hyperplastic endometritis. The hemorrhage at times was profuse; for nine months the woman had been confined most of the time to her bed. Fibroids were also present. Dilatation, removal of masses of hypertrophied mucous membrane with the forceps, scraping the cavity with the curette, were followed by immediate and permanent relief, no menorrhagia having occurred for two years and a half. The fifth case was one in which the cavity of the cervix was dilated with a tent, the curette introduced, and small growths removed which had, upon microscopical examination, something the appearance of malignant disease. The dilatation and the use of the curette were followed by an arrest of the hemorrhage. In the first case, although the fibroid was not removed by extreme dilatation, the hemorrhage was immediately controlled. In the second case, hemorrhage, without discoverable cause, and of four years' standing, was relieved by the dilatation and had not returned. In the third case, hemorrhage was greatly diminished by the first tent introduced. In the third and fourth cases it was impossible to affirm that dilatation alone would have arrested the flow, for in both cases the curette was employed and hypertrophied mucous membrane and hyperplastic growths were removed; and yet it did not seem certain but that the dilatation, by removing the constriction of the cervix, might not have alone arrested the hemorrhage.

The theory with regard to the operation was, that it removed the constriction at the internal os, consequently relieved the congestion of the tissues above that part. The suggestion was thrown out, had we not been too ready to substitute cause for effect, and was not the hyperplasia of the lining membrane of the uterus, etc., the consequence of strangulation of the cervical vessels by a moderate constriction of the circular fibres of the cervix, and with the removal of the one, relief would come for the other?

Dr. D. H. STORER, of Boston, remarked that he had seen cases within the last three or four years similar to those reported by Dr. Lyman, in which he was exceedingly surprised in noticing how much relief had been given by introducing a sponge-tent. The histories of two cases were related, in which permanent relief from the uterine hemorrhage had been afforded by the introduction of a sponge-tent for purposes of diagnosis.

Dr. WILSON, of Baltimore, remarked that he had repeatedly observed the advantage arising from the use of tents for arresting hemorrhage from the uterine cavity, and he regarded Dr. Lyman's explanation as very rational—namely, removal of the constriction at the internal os. A case of eleven years' standing was related, in which there was a large fibroid in the body of the uterus. The doctor did not feel able to do anything in the way of removal of the tumour, but introduced a sponge-tent for purposes of further examination, and from that time forth the woman had no hemorrhage. Dr. Wilson subsequently removed the fibroid by enucleation. Although in his case the hemor-

rhage was arrested, it was followed by the most terrific labour-pains, which required the use of hypodermic injections of morphine to control.

Dr. ALBERT H. SMITH, of Philadelphia, remarked that he had seen many cases in which uterine hemorrhage, that had lasted for years, had been entirely relieved by a single application of a sponge-tent. Especially had this been the case when much enlargement of the organ had been present; and he had seen it restored within three months after such dilatation to the size of the ordinary non-gravid uterus. But in endorsing such dilatation as a method of treatment one caution was necessary, and that was, to exclude malignant disease. For, according to his experience, dilatation in malignant disease might be followed by rupture of the uterus. He had had better results by introducing one large tent, and allowing it to remain forty-eight hours, than by introducing a series of tents, and producing a more rapid dilatation. After a full dilatation by means of a single large tent, protect the patient by the use of antiseptic washes.

Dr. SCOTT, of San Francisco, remarked that in the use of these tents it was necessary that great caution should be used with reference to the cause of the hemorrhage. In cases of simple fungoid granulation, or in connection with simple fibroid tumour, as long as there was no plastic inflammation present, a sponge-tent could doubtless be safely used. But in many cases the hemorrhage might depend upon cellulitis, acute or subacute, and in such cases the introduction of a sponge-tent was dangerous. That was a matter, however, which could be readily guarded against, and proper care taken that the uterus was free and movable.

As an assistant to Dr. Lyman's suggestion, Dr. Scott suggested, after dilatation had been effected by the tent, to wash out the cavity thoroughly with water heated to 110° or 115° F. In that way not only was the cavity cleansed, but the admirable effect of hot water in constricting the bloodvessels was secured. Another efficient agent was iodine. After thorough dilatation and washing out the cavity, Churchill's tincture of iodine could be thrown in with perfect safety.

Dr. GOODELL, of Philadelphia, remarked that there was another reason why sponge-tents were so successful in arresting uterine hemorrhage, and that was, because the little growths which gave rise to the hemorrhage became entangled in the meshes of the sponge, and were thus removed with the removal of the tent. A case was related in which a small polypus was removed upon a sponge-tent, the polypus having previously escaped notice. Small portions of the lining membrane of the uterus had been observed upon the sponge-tent on repeated occasions. He could fancy that perhaps in some of Dr. Lyman's cases there had been a small mucous polypus present that had escaped notice, or a fungoid degeneration, which, being removed by the sponge, the hemorrhage ceased.

Dr. TRENHOLME, of Montreal, referred to a case of hemorrhage dependent upon the presence of a fibroid situated so low down that it was impossible to use a tent. In that case hemorrhage was relieved by free incision of the neck, accomplishing the same purpose as dilatation, namely, removal of the constriction.

Dr. LYMAN remarked, with regard to diagnosis, that no one would think of introducing a sponge-tent into a uterus which was the seat of malignant disease. In his cases the tent had been used for purposes of diagnosis; and in answer to Dr. Goodell, he would say that he had not used the sponge-tent in any case but the laminaria; hence, there could not have been any removal of fungoid growths by becoming entangled in its meshes. With regard to the *modus operandi* of the incision referred to by Dr. Trenholme, Dr. Lyman believed it covered the same ground as dilatation by means of the tent. The theory which he wished to advance was, that there was a constriction of the vessels at the internal os, which gave rise to congestion of the tissues above; that such constriction was due doubtless to some morbid condition beneath the mucous membrane; hence the operation, although the opening through the canal was apparently sufficiently large; and that such condition was not to be relieved simply by pressure upon the mucous membrane. Might it not be that many of

the hyperplastic conditions found above, if not all, were due to constriction or some morbid condition of the vessels at the point indicated, hence mere effects, and not causes?

—

Chronic Inversion of the Uterus of Thirteen Years' Standing Cured by Pregnancy.

Dr. Le Dibarder relates (*Annales de Gynécologie*, Jan. 1877) a case of chronic partial inversion of the uterus in which the patient became pregnant, and the inversion was thereby cured. When the patient came under observation she was forty-two years old. By a former marriage she had had several children. She had been married a second time but had no more children, although earnestly desiring them. The last confinement took place thirteen years previously, and was accompanied by severe hemorrhage. Ever since she had suffered from profuse and gradually increasing menorrhagia, and was unable to lie in any position except on her back. On examination the vagina was found to be occupied by a pyriform tumour which projected through the dilated cervix, and bled at the slightest touch. The finger could be readily passed between the tumour and the cervix to a depth of two centimetres. On the 23d of August, 1875, prolonged and repeated attempts were made at immediate reduction, a considerable degree of force being used. The author several times succeeded in carrying up the fundus to the level of the cervix, but no further. The attempt was then abandoned, with the intention of shortly renewing it, and injections of perchloride of iron were prescribed. The patient did not reappear until October 20. In the mean time the menses had recurred in a natural manner in the course of September, and there had been no other hemorrhage. The uterus was found to be completely restored to its place. The author concluded that nothing but the occurrence of pregnancy could have completed the restoration, and that this had probably taken place. Such proved to be the case, and on June 19, 1876, normal delivery took place, without any excessive hemorrhage, and was not followed by any recurrence of inversion. The author remarks that the mechanism of this reduction, produced by the growing ovum, illustrates the efficacy of constant and gradual pressure acting at a *single point*, on one side of the inverted fundus, and tends to confirm the correctness of the principle laid down by Marion Sims for the performance of artificial reduction—namely, to make the pressure near the orifice of one Fallopian tube as soon as the inverted body has been carried up beyond the level of the os.—*Obstetrical Journal of Great Britain*, June, 1877.

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Case of Ovariotomy, with Exceptional Adhesions.

On the 9th December last, M. Michaux, of Louvain, performed ovariotomy (*Paris Médical*, Feb. 15, 1877). The operation was nearly completed, when all at once an intimate and extended adhesion was discovered between the cyst and the stomach, which had not been foreseen; the digestion had always been regular, and at most there had been some vomiting. The cyst adhered very intimately to the greater curvature of the stomach; the walls of the cyst and those of the viscus seemed, at this point, to be mingled and formed into one fold. What was to be done? Two courses were open—to raise and detach as much of the cyst as possible, leaving only the external layer attached to the viscus, or to excise the portion of the cyst, leaving in the belly all the adherent part. M. Michaux preferred the latter, as easier in execution and sure in its results; accordingly he cut away the whole of the cyst which was external, and the remainder, which he could not separate, and which was about the size of two palms of the hand, he united to the lips of the wound by a large number of interrupted metallic sutures. A month afterwards, the patient was well.—*London Med. Record*, June 15, 1877.

Medical Jurisprudence and Toxicology.

Poisoning by Santonin.

Prof. Binz, of Bonn, has just recorded an interesting and important case of poisoning by santonin, which came under his observation two years ago. The patient was a delicate child, twenty-five months old, who about 6 A. M. took two lozenges, each containing .025 milligramme of this drug. At 4 P. M., without any previous warning, sudden clonic convulsive spasms set in, commencing at the left angle of the mouth, and thence spreading over the left side of the face. These were succeeded by similar spasms in the right arm, beginning in the fingers. A quarter of an hour after, a tonic spasm invaded the left side of the face and left arm, then rapidly disappeared, leaving a fibrillary twitching of the muscles of the left angle of the mouth and left eyelid, which soon afterwards ceased quite suddenly. Two more convulsive attacks occurred on the same evening, and in one the respiratory movements threatened to come to a standstill, although the heart was beating quite strongly and the pulse was normal. Two or three similar fits occurred daily at intervals for the next four or five days, after which the child was as well as before. During this time the urine was of the peculiar greenish-yellow colour which has been noticed after the exhibition of this drug. Professor Binz suggests that the localization of the convulsive spasms on the left side of the face was due to its being smaller and less developed than the right side, thus making it "a place of less resistance." As santonin is not included among poisons in works on forensic medicine, the best treatment of such a case is a question of much importance, and to decide this, as well as its its physiological action, some experimental investigations were made on cats, rabbits, and frogs. Professor Binz injected weak solutions of santonate of soda in water, and found that the mesocephalon was first attacked, and that the convulsions principally affected the muscles supplied by the third, fourth, fifth, sixth, and seventh cranial nerves. The spinal cord and the general muscular system were afterwards involved. There was no disturbance of the heart's action or of the blood-pressure. Numerous observers have already described the peculiar effect of santonin on vision, causing objects to appear yellow or green. Nitrite of amyl, morphia, and artificial respiration were powerless against the spasms, although the latter must be employed to ward off asphyxia from paralysis of the diaphragm. Ether and chloroform arrested the attacks if given at their very commencement, and always lessened their severity and duration. Hypodermic injections of chloral hydrate had much the same effect, so that we have in these agents very powerful physiological antidotes against the action of the poison, whilst we wait for its elimination.

The extremely prevalent use of santonin as a vermicide by the profession, and its common sale in worm powders and worm lozenges by every druggist, make the above case and observations of more than ordinary significance. Its occasional toxic action on the cerebrum has been noticed before, and referred to by several writers; but that it could induce such severe symptoms was not generally known, and it now behooves us to give the drug with more precision, and to watch its effects with more care, than has been the usual custom. The quantity taken in this instance—viz., a mere fraction of a grain—seems very small to have produced such a serious result; but as the child has never suffered from any convulsive symptoms before or since, and as the urine was so evidently coloured by the drug, we must either suppose that there was an unusual susceptibility to its action, or, more probably, that by some mistake the dose was much larger than was inferred from the lozenges that were analyzed. The effects on the lower animals prove its toxic power, and leave no doubt as to the necessity of our using the remedy much more sparingly than we do at present; and we are at least bound to take some trouble to ascertain the probable presence of worms in a child's alimentary canal before administering a medicine which may occasionally even act as a poison.—*Lancet*, June 9, 1877.

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Anatomy and Physiology.

Charcot and Pitres on Cerebral Localization.

(*Concluded from page* 347.)

Odier's case is that of a young soldier who received a sabre-wound in the left parietal region, from the effects of which he apparently recovered, but who, twenty years after, began to suffer from convulsive spasms, beginning in the little finger of the right hand. These increased in frequency and intensity, and developed into unilateral convulsions, with loss of consciousness. The attacks could be stopped at first by tightening a ligature round the arm; but later, after a debauch, the ligature failed to have an inhibitory influence. The right side ultimately became partially paralyzed. After death, corresponding to the wound on the left parietal bone, a fungous tumour of the size of a large apple was found beneath the dura mater, pressing on the brain in the direction of the left lateral ventricle. The right lateral ventricle was distended. The other parts of the brain were normal.

A case reported by Charcot and Ball, and referred to by Brown-Séquard, illustrates the commencement of a fit in the muscles of the face. The fit began with a numbness in the left side of the face and spasm of the upper lip. The attack could be arrested by pinching or slapping the parts where the aura originated. After death two large tumours were found in the dura mater, the one pressing on the convolutions, immediately posterior to the fissure of Sylvius in the right hemisphere, the other appearing in the internal surface of the posterior extremity of the occipital lobe, which it displaced.

In a case reported by M. Lépine, the convulsions were arrested by compression of the carotids. This was a case of right hemiplegia in which, five months after the attack, convulsions began to manifest themselves, beginning in the face. These convulsions were arrested by compression of one or other of the carotids, but recommenced on cessation of the pressure. After death a focus of yellow softening was found in the ascending parietal convolution close to the longitudinal fissure.

The existence of partial epilepsy, especially when it is associated with paralytic symptoms, points almost certainly to a lesion of the cortical motor zone or its immediate vicinity. But it proves nothing as to the nature of the lesion. All that is necessary is that the lesion should cause prolonged irritation. This may be caused by diverse pathological conditions, such as lesions of the meninges, the gray matter, or the subjacent medullary fibres. Various examples are given of epilepsy caused by such different pathological conditions. One is from Cruveilhier, in which, after an attack of left hemiplegia, partial epilepsy occurred in the paralyzed side. After death, a tumour of the size of a nut was found pressing on the cortex "at the junction of the exterior with the middle convolutions."

Another is detailed of permanent left hemiplegia with secondary contracture, in which attacks of unilateral epilepsy developed themselves on the paralyzed side. After death, "plaques jaunes" were found in the right hemisphere, in the paracentral lobule and middle third of the ascending parietal convolution. In a similar case a "foyer ochreux" was found in the medullary substance, below the paracentral lobule. Secondary degeneration had occurred in the

right internal capsule, and downwards in the posterior part of the left lateral column of the spinal cord, on the side of the paralysis.

The convulsions caused by cortical lesions appear in some cases to have the character of choreiform movements. A very interesting case of this kind occurring in the Salpetrière last year is detailed with considerable minuteness.

The patient, a woman aged 60, who had probably contracted syphilis at the age of 25, was admitted into the Salpetrière in 1874 for a trembling (?) of the left side of an obscure nature. In May, 1876, she fell when going into bed, and received some injury on the right side of the head, in the superior temporal and posterior parietal regions. Next morning, she perceived that the left side of the body was weaker than the right. She was brought to the infirmary, and remained there till the beginning of June. On the 23d of June she had an attack of loss of consciousness, followed by convulsive movements on the left side of the body. On admission into the hospital the next day, she was found to be quite sensible and free from pain, but affected with choreiform convulsions of the left side. These affected the zygomatic muscles, the elevator of the upper lip, and the orbicularis oris. Neither the eyes nor the eyelids were affected. The left sterno-mastoid and the arm and leg were affected in a similar manner. She had no tonic convulsions. The patient could not execute any voluntary movement with the left hand. Sensibility was unimpaired. The symptoms continued on the 25th, the choreiform movements being most marked on attempts at voluntary movements. Next day the convulsions had diminished, but paresis on the left side had increased. On the 28th the paresis of the limbs had diminished, but the facial paresis was still very marked. About the beginning of August the symptoms had almost disappeared, both the choreiform movements and the paresis. She died of acute pneumonia on August 19th.

After death, signs of periostitis were seen in the right temporal region, corresponding with a painful swelling, which had developed some time before death. The internal surface of the skull at the junction of the parietal and frontal bones was rough and ulcerated over a space about the size of the palm of the hand. Pachymeningitis existed to a similar extent. The central part was adherent to the pia mater, and beneath this the convolutions were depressed in the region of the posterior half of the second and third frontal convolutions, and the inferior half of the ascending frontal. The depression was most marked at the base of the third frontal convolution, and at this point only the meninges were adherent. On cutting into the brain a few yellow lacunæ were found, one in the medullary substance of the sphenoidal lobe, another in the optic thalamus, and two others in the extraventricular nucleus of the corpus striatum. No other abnormalities existed elsewhere.

Westphal has described certain movements, which he calls automatic gesticulations, in connection with cysticerci of the brain. These occur in the same parts as are at other times the seat of epileptiform convulsions. A case of this kind is quoted, in which there were found several cysts in the pia mater compressing the cortex. Westphal attributes the automatic gesticulations to irritation of the cortical centres; but on this point the authors would not be too definite. Samt has observed similar symptoms in cases of general paralysis, after the apoplectiform attacks to which these patients are so liable. MM. Charcot and Pitres have never observed such phenomena in connection with cortical lesions, and would hesitate to attach any diagnostic significance to them.

The authors devote a final chapter to the consideration of the topography of the motor area in the human brain, from the standpoint of the clinical and pathological observations above recorded. The motor area includes the paracentral lobule, the ascending frontal, and, according to the reporter, and in opposition to the views of Hitzig, the ascending parietal convolution. Probably also the bases of the three frontal convolutions belong to this area.

Samt has disputed the motor significance of the ascending frontal convolution, on the strength of a case which, however, will not bear examination, inasmuch as he has not shown that destruction of this particular convolution existed without paralysis. All the parts of this motor area are not function-

ally homologous. It is composed of different centres, which have each their own relation to definite movements.

This conclusion had been indicated by M. Bouillaud in 1825, from a consideration of the occurrence of monoplegiæ in connection with cortical lesions. In reference to the apparent contradiction between this hypothesis and the facts of experimental physiology, he observed, "a time will come when new light will dispel the contradictions which seem at present to exist." "The prediction of Bouillaud," remark the authors, "has to-day been realized, and the clinical facts on which he based his reasoning maintain their value."

As regards the exact position of the motor centres, clinical evidence is to be based either on destruction or on irritation of these centres. Obviously the former is more likely to admit of more accurate conclusions as to localization, inasmuch as it is impossible to say how far influence of an irritative lesion radiates; while limited destruction causes limited paralysis. The facts above recorded show that destructive lesions situated in the upper two-thirds of the ascending convolutions or in the paracentral lobule, cause paralysis of the limbs on the opposite side without paralysis of the face; while destructive lesions of the lower third of the ascending convolutions cause paralysis of the face on the opposite side without paralysis of the limbs

In addition to the cases above recorded, and which are individually analyzed, some others are referred to, reported by Löffler and quoted by Hitzig. In one of these, in consequence of fracture of the summit of the right parietal bone by a bullet, the individual became paralyzed in the limbs at once. The face became paralyzed on the twelfth day. The *post-mortem* examination revealed an abscess at the seat of injury.

In a second case of bullet-wound at the posterior and superior extremity of the left parietal bone, close to the sagittal suture [over the postero-parietal lobule—leg-centre.—*Rep.*] paralysis immediately showed itself in the leg of the opposite side. On the seventh day paralysis attacked the arm, but this rapidly disappeared, while that of the leg recovered but slowly.

In a third case there was fracture by a bullet of the summit of the right parietal, causing paresis only of the left leg.

In a fourth there was fracture of the two parietal bones at the vertex, causing paralysis, with hyperæsthesia only of the lower limbs.

What is true of paralysis is also applicable to partial epilepsy or limited convulsions. When the attack begins in the limbs, the lesion is situated near the upper extremity of the ascending convolutions; when it commences in the face, the lesion is towards the inferior extremity of the same convolutions. Apparent exceptions, one by Hughlings Jackson, and another by Huguenin, are shown to have been due to the lesion not being circumscribed or definite.

Several facts seem to indicate the situation of the centre for the arm in the middle third of the ascending frontal convolution. The authors think that it is impossible to state the exact position and limit of the centre for the lower extremity, nor is it possible to give the exact situation of the centres for the movements of the neck, the eyes, and eyelids. They do not think that the clinical facts are in accordance with the localization of the centre for the movements of the eyes in the angular gyrus—a view which they attribute to the reporter; as they have observed a case, and others are on record, of softening of the inferior parietal lobule and angular gyrus without any motor affection of the eyes or eyelids. [The authors misapprehend my views on this subject. I have shown that movements of the eyelids and pupils, and of the head, result from electrical irritation of this region, but I have distinctly maintained that this is not a motor region; the movements being only the reflex or associated indications of excitation of subjective visual sensation. Destruction of this region in monkeys causes no motor paralysis whatever; but only, when unilateral, temporary blindness of the opposite eye, and total blindness when bilateral.—*Rep.*]

MM. Charcot and Pitres conclude this valuable contribution to cerebral pathology with the following *résumé* of their researches.

1. The cortex of the human brain is not functionally homologous; one part only is related to the exercise of voluntary movements. This region, which

may be called the cortical motor zone, comprehends the paracentral lobule, the ascending frontal and parietal convolutions, and probably also the bases of the frontal convolutions.

2. All cortical lesions, whatever their extent, situated outside the motor zone, are latent as regards affections of motility; that is to say, they do not cause either paralysis or convulsions. Neither do they determine secondary degeneration of the spinal cord.

3. On the contrary, destructive lesions, even of the most limited character, affecting the motor zone, either directly or indirectly, necessarily cause affections of voluntary motor power.

4. If the lesion be sudden, if it at one blow destroy a large extent of the cortical motor zone, it gives rise to a sudden hemiplegia with flaccidity, and accompanied at a later period with secondary degenerations of the spinal cord and late rigidity of the paralyzed muscles, completely resembling *hémiplégie centrale vulgaire*.

5. If the lesion be limited to a circumscribed area in the cortical motor zone, it gives rise to monoplegia (suppression of function), or to convulsions of the kind described as partial epilepsy (phenomena of irritation). After a certain time, limited destructive lesions of the motor zone determine a secondary degeneration, which descends along the crus cerebri and medulla oblongata to the lateral column of the opposite side of the spinal cord.

6. The study of paralysis and convulsions of cortical origin shows that the motor centres of the opposite limbs are situated in the paracentral lobule, and upper two-thirds of the ascending convolutions; and that the centres for the movements of the lower facial region are situated in the lower third of the ascending convolutions, in the neighbourhood of the fissure of Sylvius.

7. It is very probable that the centre for the individual movements of the upper limbs is situated in the middle third of the ascending frontal convolution of the opposite side.

8. Lastly, we do not yet know exactly the situation of the centres for the movements of the *nuque*, the neck, the eyes, or the eyelids.—*London Medical Record*, July 15, 1877.

On the Anatomical Characteristics of the Blood in New-born Infants during the First Days of Life.

M. G. Hayem presented a note to the Academy of Sciences of Paris (May 21) on this subject. 1. When the blood of the new-born infant leaves the capillaries it is black, almost as much so as the venous blood 2. The red corpuscles are much more unequal in size than in the adult; the largest exceed the largest corpuscles in the adult; and in the same way, the smallest are smaller than in the latter. 3. The red corpuscles of the child seem to differ but very slightly from those of the adult in intimate composition; in fact, they allow endosmose, and lose shape more rapidly at the contact of reagents and of moisture; the small corpuscles especially easily become spherical. 4. The number of red corpuscles contained in a cubic millimetre is almost as high at the moment of birth as in the most vigorous adult, and consequently always notably superior to that of the corpuscles of the mother's blood. The average number per millimetre in seventeen infants was 5,368 000. The highest figure was 6,262,000, and the lowest 4,340,000. The result furnished by these calculations appears to be influenced by the manner in which the cord is tied. In six children who had the cord tied immediately, the average figure was 5,087,000. In eight children where the cord was tied only after the cessation of the pulsations of the umbilical artery, the medium was 5,576,000, making a difference of 489,000 in favour of the latter. 5. The colouring power of infants' blood, that is to say, the proportion of hæmoglobin determined by the aid of the chromometric process employed by M. Hayem is, on the average, as strong as that of the adult. 6. At the moment of birth, the same varieties of white corpuscles are found as in the adult. However, these elements are a little smaller, and the small variety named globulines are relatively more abundant. During the first two or three days of life, the number of white

corpuscles is three or four times greater than in the adult. The average for the first forty-eight hours was 18.000 white corpuscles per cubic millimetre, whilst in the adult the average of white corpuscles is about 5000. 7. After birth, the blood of the child undergoes important modifications. In a first period corresponding to the diminution of the weight of the new-born infant, the number of corpuscles, both red and white, remains stationary, or slightly increases; when it reaches its minimum weight, that is to say, usually on the third day, there is at the same time a sudden and considerable decrease in the number of white corpuscles, which fall from 18,000 to 6000, or even 4000, and an increase in the number of red, which generally reach their maximum. The rise in the number of the red corpuscles is very variable, from 100,000 to 600,000, and not constant. 8. From the time when the child begins to gain weight, the number of white corpuscles rises a little, it presents greater oscillations than in the adult, and remains generally higher than in the latter up to a yet undetermined epoch. At that time there is an average of from 7000 to 9000. The number of red corpuscles remains definitely smaller, and in the course of the second week, a decrease of about half a million on the actual amount is found. 9. The fluctuations in the anatomical composition of the blood, as much in relation to the variety of corpuscles as to their number, are very evident from one day to another, and this is one of the most striking characteristics of the blood of infants. The modifications in the proportion of the corpuscles of different diameters bring on corresponding fluctuations in the colouring power of the blood. 10. It is therefore seen that the blood of the new-born child shows characteristics specially belonging to it, and sufficiently important to allow it the designation of fœtal blood. This fœtal blood is constituted by elements still partially possessing the characteristics of the corpuscles of the embryo. The fluctuations which it undergoes from one day to the other evidently relate to its state of evolution.—*London Med. Record*, July 15, 1877.

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The Physiology of Sugar in Relation to the Blood.

Dr. F. W. Pavy's second communication on this subject to the Royal Society is the continuation of the one (see *Monthly Abstract* for August, p. 349) in which he described in detail his new gravimetric process for the accurate determination of sugar in blood. The present communication is the issue of the application of that process.

Dr. Pavy dealt with the question of the quantity of sugar in the system under the following conditions: 1. The amount which exists in blood in its normal condition. 2. The comparative state of arterial and venous blood. 3. The spontaneous change which takes place in blood after its removal from the system.

The author pointed out that the very rapid changes which take place in blood under altered conditions of the system render it essentially necessary that the greatest precaution should be observed in order to obtain blood in its natural condition. If taken during life the animal should be in a perfectly tranquil state. If after, it should be procured as instantaneously as possible after the death of the animal, so that no opportunity could be afforded for the blood to be affected by the post-mortem production of sugar in the liver.

The experiments now under notice were made on dogs', sheep's, and bullocks' blood, and a series of six, in one case seven, examinations of each kind instituted, and two analyses made for every sample taken.

In quoting Dr. Pavy's figures we are giving the mean of the two separate analyses. It is necessary, however, to state that the extremes of each show but trifling variations, and these are rarely so great as to affect more than the second figure in decimals. The differences were so slight, indeed, that had the results been obtained by rival analysts no dispute could have arisen, as the variations were within the recognized range.

Dr. Pavy detailed the precautions which he adopted in order to secure blood from the various animals in its natural state. In the case of the dog, the painless and instantaneous mode of destroying life by pithing was performed.

The larger vessels in the chest were immediately freely incised, and the blood collected and analyzed before coagulation could take place. With the sheep the blood was obtained from animals slaughtered in the ordinary way, viz., by division of the vessels of the neck; and the time which elapsed between collection and the commencement of the analysis was not more than a quarter of an hour. The blood of bullocks was obtained from animals slaughtered by the Jewish method; this consists of a sudden severance of the soft structures of the neck down to the vertebral column. The incision yields arterial blood, and the time which elapsed between collection and the commencement of the analyses was one hour.

The mean results of seven examinations of dogs' blood showed the amount of sugar which it contained in parts per 1000 to be as follows: 0.751, 0.786, 0.700, 0.766, 0.786, 0.921, 0.803 respectively. This gives an average of 0.787 on the whole series. The blood of sheep yielded 0.470, 0.490, 0.517, 0.559, 0.569, 0.526 respectively, or an average of 0.521 parts of sugar per 1000. The bullocks' blood gave 0.703, 0.525, 0.492, 0.456, 0.499, 0.588, or an average of 0.543.

In each of these experiments every care was taken to secure the blood in such a manner that it was a reliable representation of its ordinary condition during life. Unless such precautions are taken the results obtained will be, in a physiological point of view, worthless and misleading. This fact was strikingly illustrated by a comparison of results which Dr. Pavy obtained from four bullocks killed in the ordinary way, viz., by felling the animal with a pole-axe, and breaking up the spinal cord by means of a cane. In the first two of these observations the opening into the bloodvessels was made as speedily as possible after the animal had been felled. In the next two Dr. Pavy had reason to believe that this necessary condition had not been complied with, and that some little time was allowed to elapse between the felling of the bullock and the opening of the vessels. The effect of this delay in the post-mortem production of sugar is shown by the following results: Blood of the first two bullocks (mean of two analyses) yielded 0.596, 0.688, parts of sugar per 1000, respectively. In the second two a mean of 1.053 and 1.094 parts of sugar per 1000 were given.

The conclusions to be drawn from these various experiments are, that the amount of sugar contained in the blood of sheep and bullocks is about ½ per 1000, or 1 in 2000, and in a dog about ¾ per 1000, or 1½ per 2000. Taking the results of the whole series of observations they show a remarkable uniformity and harmony in the amount of sugar contained in the blood of the respective animals.

In striking contrast to this uniformity and consistency of the results attained by Dr. Pavy are the figures given by Bernard, who states (in *Comptes Rendus*, June 19, 1876, p. 1409) that the lowest limit of sugar in the blood is 1 per 1000, and that in the normal state the amount of sugar varies from 1 to 3 per 1000.

Comparative State of Venous and Arterial Blood.—The author next considered the comparative states of the arterial and venous blood. This part of the subject is one which possesses the greatest importance from a physiological point of view.

One of the effects of anæsthetics on animals is to occasion an abnormal amount of sugar in the blood. In order to attain accuracy, therefore, it is indispensable that blood should be taken at a time when the animal is not under such influence.

In the first observation made on the blood of a dog, life had been instantaneously destroyed by pithing, and collections were made immediately after from the jugular vein and crural artery. No time was allowed for the effect of post-mortem formation of sugar in the liver to influence the blood. The results obtained by this method were as follow: Crural artery, .799, .791; *mean*, .795. Jugular vein, .793, .791; *mean*, .792. In order, however, to obtain evidence to which no exception could be taken, Dr. Pavy adopted another method of procedure, which he was enabled to do just prior to the meeting of the Society, from having a restriction previously imposed under the Vivisection Act removed. This enabled him to collect the blood under

the natural conditions of life, both from the carotid artery and the jugular vein. The animals operated upon were placed under an anæsthetic, during which time the vessels were exposed, and a thread placed loosely round each. After they had regained tranquillity, and the effect of the anæsthetic passed off, the vessels were drawn forward and openings made into them to allow of the simultaneous escape of blood. So quietly and painlessly was this operation of collection performed, that the animals themselves manifested no sign of consciousness of what was taking place. The analyses of the blood obtained in this manner were commenced before coagulation had time to occur, and the results were as follow: No. 1. Carotid artery, .806, .817; *mean*, .811. Jugular vein, .808, .788; *mean*. .798. No. 2. Carotid artery, .854, .873; *mean*, .863. Jugular vein, .863, .896; *mean*. .879.

From these figures it is clearly evident that no material difference exists in the amount of sugar contained in arterial and venous blood.

Compared with these results the figures given in *Comptes Rendus* lxxxiii., No. 6, p. 373, by Bernard, stand in direct opposition. His volumetric process tends to show that a disappearance of sugar takes place largely while the blood is passing from the arterial to the venous system. In the journal referred to he gives the results of five observations referring to the crural artery and vein, and three to the carotid and jugular.

The mean of these several observations shows an apparent difference between arterial and venous blood of .300 part of sugar per 1000. The least difference stands in an observation in which the figures are 1.100 parts per 1000 for arterial, and 1.080 for venous, showing a variation of .020. The greatest difference is in an observation where the figures stand 1.510 for arterial, and .950 for venous. This comparison relates to the carotid artery and jugular vein, and the difference amounts to .560 part per 1000, which represents actually altogether a larger proportion of sugar than Dr. Pavy has found to exist naturally in the blood of the sheep and the bullock.

Spontaneous Disappearance of Sugar from Blood.—Turning to the third part of his subject, viz., the spontaneous disappearance of sugar from blood after its removal from the system, Dr. Pavy gave the results of a series of analyses he had conducted, and which are as follows:—

No. 1.	Taken immediately after death	mean .786
	" after 1 hour	" .739
No. 2.	Taken immediately after death	" .700
	" after 1 hour	" .670
No. 3.	Taken immediately after death	" .766
	" after 1 hour	" .751
	" " 23 hours	" .285
No. 4.	Taken immediately after death	" .786
	" after 1 hour	" .728
	" " 24 hours	" .302
No. 5.	Taken immediately after death	" .921
	" after 1¾ hours	" .793

A somewhat parallel series of experiments, made by Bernard, and published in *Comptes Rendus*, June 19, 1876, shows a remarkable discrepancy with the foregoing. Bernard's figures show—

Amount of glucose immediately after death	1.078
" " after 10 minutes	1.010
" " " 30 "	0.880
" " " 5 hours	0.440
" " " 24 "	0.000

Dr. Pavy pointed out that there was nothing new in the suggested discovery that a gradual destruction of sugar takes place with blood after its removal from the system. He himself had brought the fact before the notice of the Royal Society so far back as 1855, when he stated that under the changes of the decomposition of blood normal animal glucose is very readily metamor-

phosed; the rapidity of the metamorphosis depending on the activity of the decomposition of the animal substances present.

In conclusion the author stated that the evidence adduced in this communication shows that the results which Bernard has obtained by the experimental *modus operandi* he has been recently employing are erroneous, and consequently the inferences he has drawn from them are equally in error. The cause of truth and the interests of science demand that what he has recently been advancing should be eliminated from physiological literature.—*Lancet*, July 14, 1877.

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On a Case of Persistence of the Thymus Gland.

Dr. BRIGIDI, of Florence, relates the following interesting case of persistence of the thymus gland in a man aged 29, in the *Commentario Clinico de Pisa* (abstracted in *Journal de Médecine et de Chirurgie Pratique*, April, 1877). When making a necropsy on a patient who had died of pulmonary tuberculosis, Dr. Brigidi found in front of the trachea a reddish elongated body 33 centimetres long, 70 millimetres wide at one part, and 54 at another. After prolonged immersion in alcohol it still weighed 190 grammes. Microscopic examination revealed the elements of a thymus. The body had undergone considerable hypertrophy, which caused it to resemble a sarcomatous mass.

It is interesting to remark that this abnormal delopment of a veritable tumour in the mediastinum had caused no symptoms. We know that certain influences have been attributed to the thymus, whence the name thymic asthma has been given to certain forms of stridulous laryngitis. A thymus so much developed as this, and causing no symptoms, has rarely been met with. The heart-sounds were dull. It is probable that percussion of the region would have elicited a dulness of an extent which, in the absence of any other lesion, might considerably embarrass any physician not previously warned of the possibility of such a lesion. The obstacle to the respiration, by the persistence of the thymus, might have contributed to provoke the development of the pulmonary tubercles.—*London Medical Record*, July 15, 1877.

Materia Medica and Therapeutics.

On the Therapeutic Action of Salicylic Acid.

M. GUBLER, at the meeting of the Paris Société de Thérapeutique, on April 17, stated that numerous experiments had more and more convinced him that salicylic acid possesses neither antiphlogistic nor antipyretic properties. In certain cases it produces copious diuresis; in others, on the contrary, the quantity of urine voided is diminished. The reason of this is, that salicylic acid is a diuretic after the fashion of the neutral salts; it stimulates the kidney whilst eliminating itself by that organ, but sometimes it irritates, and this irritation produces an increase of urine. If, however, the kidney be diseased, as in certain severe fevers, and in albuminuria, this stimulation may go on to inflammation, and then there is a diminution of the water which passes through the kidney. It is, therefore, not an absolute diuretic. It is, nevertheless, probable that in cases in which it induces diuresis it brings on an arrest of the temperature up to a certain point. To insure a certain amount of diuresis is always sufficient to diminish tension and even combustion, but beyond that action nothing in the effects of salicylic acid recalls those of quinine. As to its topical action, it is certainly antipyretic, but here some difficulties are manifest. Salicylic acid is a violent sternutatory; it brings on dryness, bitter taste, and burning in the respiratory passages. For this reason some surgeons have

given up the use of salicylicated cotton. M. Gubler has also used salicine, and does not consider it to be a very good drug. It likewise becomes partially changed into salicylic acid, since this latter is only the product of a combustion of salicine. The urine of patients who have taken salicine contains salicylic acid. This is a transformation analogous to that of chloral into chloroform and formic acid. M. Gubler has also observed that the urine of patients after taking salicylic acid is of a brown bistre-like colour similar to the tint given to the urine by carbolic acid. It appears that the reduction into carbolic acid here also only occurs partially. M. Hogg had found carbolic acid in the urine of patients under the influence of salicylic acid. —M. Trasbot pointed out, as a proof of the irritant properties of salicylic acid, the presence of numerous ulcerations in the stomach of a horse which had taken 75 grains. M. Dujardin-Beaumetz was pleased with the interpretation given by M. Gubler to the action of salicylic acid on the kidney. He indeed tried it in polydipsia, and only obtained gastric irritation from its use. This substance had been used in Germany as an excellent remedy for diphtheria, thrush, etc., but M. Dujardin-Beaumetz was convinced that in the case of thrush salicylate of soda is no better than any other alkaline solution. As to its action in rheumatism, it cannot be denied that it diminished the pain, but without at all abridging the duration of the disease.—M. Gubler reminded his audience that M. Bergeron had often at the Sainte Eugénie Hospital tried salicylic acid as an external application in diphtheria, and that he always had negative results. Its topical action, however, was of a different character. M. Bucquoy cited M. Cadet de Grassicourt's testimony to the same effect.—*London Medical Record*, July 15, 1877.

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On Salicylic Acid.

Prof. GERMAIN SÉE has just read at the Academy of Medicine, an elaborate memoir (which is published in detail in the *Union Médicale* of July 3 *et seq.*) entitled "Studies on Salicylic Acid and the Salicylates; and on the Treatment of Acute and Chronic Rheumatism, Gout, and various Affections of the Sensory Nervous System, by the Salicylates," in which he speaks of this new article of the materia medica in most enthusiastic terms. He treats at full length of the history, chemistry, physiological, and therapeutical action of this substance; but we have only space for transcribing his conclusions as to its therapeutical effects.

"1. As an external antizymotic agent, salicylic acid has an incontestable action, but in nowise superior to that of carbolic acid, its only advantage being its privation of odour. As an internal antiseptic, it manifests no appreciable effect in either purulent affections or contagious and parasitical diseases—as diphtheria, or muguet, or gangrene, or finally in diabetes. 2. As an antipyretic, salicylic acid and the salicylates possess only transitory and doubtful properties, even when specific, miasmatic, virulent fevers, etc., are in question. Even the salicylate of quinine occupies no definite position in the treatment of marsh fevers. Powerless in the treatment of smallpox, the salicylate of soda has not been sufficiently tried in typhoid fever. Its febrifuge power is exceedingly limited. 3. It is in acute articular rheumatism that the most certain and most prompt effects are observed—so much so that we may promise with almost certainty the cure of febrile or apyretic acute rheumatism within a space of from two to four days. Fifty-one cases may be adduced in proof of this. 4. In simple chronic rheumatism the trials which I have made have proved most satisfactory. The same may be said of the acute crises which manifest themselves from time to time in simple rheumatism or in chronic rheumatic arthritis, the painful attacks of which cease as soon as in acute rheumatism. Moreover, the articular tumefactions considerably diminish, and the motions of the joints may become free even after years of pain, rigidity, and immobility—on the condition that the bony lesions have not become too deep-seated or too advanced. Twelve cases of chronic rheumatism either cured or ameliorated are adduced. 5. But it is in acute and chronic gout that the results are the most remarkable. From the commencement of my observations I was struck by the promptitude

with which the most painful acute paroxysms were arrested. Within the space of two or three days the pains, the articular fluxion, the redness of the skin, and the sensibility to touch had all disappeared. Chronic gout is just as amenable to the salicylic treatment. Continued, even in moderate doses, it affords the patients absolute security from an acute attack. The tophi of the joints diminish in size, and cease to become inflamed—in a word, the cure is complete, and that without the production of any metastasis to the heart, stomach, respiratory organs, or the brain. Not once have I been able, among the twenty-one cases I have watched, to observe the slightest retrocession of gout inwardly. No other inconvenience has been produced than the production of some disturbances in the ear, and sometimes a certain amount of debility or narcotism. The two latter phenomena disappear when the dose is diminished; but the perturbations of audition are much more persistent. Among affections which are often of a gouty nature, gravel may be mentioned. This is favourably modified, or rather more easily eliminated, by the aid of salicylate of soda, which also has the advantage of allaying the nephritic pains. 6. The salicylic treatment has seemed to be of advantage in certain facial neuralgias; but its action in this affection is not definitively established, and the same may be said with regard to sciatica. 7. In painful affections of the spinal cord, the salicylate of soda produces calming effects which are distinctly appreciable; but by the continuance of its employment a certain amount of debility is produced.—*Med. Times and Gaz.*, July 21, 1877.

On Pilocarpinum Muriaticum.

Dr. CURSCHMANN, Director of the Berlin City Tent Hospital, read a paper upon this substance at the Berlin Medical Society, which is published in the *Wochenschrift* for June 18.

Notwithstanding the enthusiasm with which jaborandi was received in the different clinics, a year and a half since, he observes, few practitioners now employ it, or only to a very limited extent. The chief causes of this are the inconstancy of its effects, and the vomiting, headache, and giddiness which often accompany its use. It was hoped that, if its active principle could be separated, the results of its employment might prove more satisfactory. This has now been satisfactorily done by Merk, of Darmstadt, who designates it *pilocarpinum muriaticum*, after *pilocarpus pinnatus*, the name given by Baillon to the most important of the jaborandi group of plants. Weber and Bardenhewer having reported favourably of the employment which they have made of this new alkaloid, Dr. Curschmann instituted some trials, with results which corresponded with theirs. He has made ninety such trials on fifty-five adults, part of whom were ill, and part convalescent or in health. He employed a 2 per cent. solution, injecting from one to one and a half gramme, and therefore 0.02 to 0.03 of the pilocarpin.

The general effects which ensue correspond pretty exactly with those caused by the jaborandi; but they are produced more rapidly and more certainly, and are more durable. The first sign, observed in almost every case in the course of, or at the end of, the first minute, is turgescence and redness of the face, that soon spreads to the neck and chest—the carotids and temporals pulsating forcibly, and the latter appearing in many cases dilated and strongly prominent. Within from three to six minutes the increased secretions of saliva and sweat appear, the latter in almost all cases continuing longer than the former, sometimes for one or more hours longer. In all the ninety cases sweating was induced. The sweating begins on the face, and soon invades the chest and abdomen, whence it proceeds gradually, if sufficient pilocarpin has been injected, to the lower extremities. After a small dose, or when the patient is little sensitive to its action, the legs, or even the thighs, may remain quite dry, or only moderately damp. In several highly sensitive persons the highest point of its action was denoted by slight chills, and in two by decided shivering. In about half the cases there was more or less considerable increase of the lachrymal secretion, which, however, never was distressing. The contemporary discharge from the nose seemed dependent on this, for no independent secre-

tion from the nose was observed, nor any from the remainder of the mucous membrane of the air-passages. In the great majority the pulse rose at the beginning of the action of the pilocarpin five or six beats, and in a few cases twenty beats; but within the first half hour it had usually resumed its normal condition. In a few instances its character remained unaltered, but in most there were dilatation and diminution of the tension of the arterial tube. No increase in the frequency of respiration was observed in either patients or healthy persons. A few cases in which the temperature was taken exhibited the same results as those obtained by Riegel and Bardenhewer—viz., that at the height of the influence of the drug the temperature sank half a degree.

Dr. Curschmann furnishes several details of the quantity of saliva discharged, which is shown to be dependent on the amount of the dose given. Some persons, however, are extremely sensitive to the action of the pilocarpin. Thus, a strong, healthy man, who came into the hospital for some trifling external ailment, discharged in the course of two hours and a half 280 cubic centimetres of saliva after a single injection of 0.01 of pilocarpin. Sweating, which under jaborandi is not a constant occurrence, has always been produced abundantly by pilocarpin. In some very susceptible persons profuse sweating has been produced even by 0.01, and only one person remained exempt from it when the dose of 0.02 was employed, and he sweated abundantly on the dose being increased. The employment of 0.03 produced greater and more durable sweating than was required, and might be disadvantageous to feeble persons. The sweating under the full action of the remedy continues from one hour and a half to two hours, in many cases only an hour; and it is as profuse as from a vapor-bath, wetting through all the body and bed linen. In ten cases the persons were weighed, in order to ascertain the amount lost by sweating, all food and drink being in the mean time abstained from. After abstracting the weight of the urine and saliva discharged, that of the sweat was found to reach one or two kilogrammes, or even two and a quarter—showing that sweating is a most powerful factor in the action of ilocarpin, and not, as it has sometimes been considered with reference to iaborandi, an uncertain appendix to its sialagogue action. The pilocarpin does not seem to exert any direct influence on the secretion of urine, for although during the sweating and salivation its quantity is of course proportionately decreased, it is free from abnormal constituents. In thirty of the cases the condition of the pupil was carefully observed, and no decided influence was produced by the subcutaneous injections. But when a few drops of a 2 per cent. or stronger solution were brought in direct contact with the conjunctiva, decided contraction was induced in from five to ten minutes, which persisted for hours, and traces of which were even observable next day.

As to the accidental effects produced by pilocarpin, vomiting is the principal; but the frequency of its occurrence is much less than when jaborandi is employed; while by the observation of certain rules it is produced so seldom that it is of little consequence as compared with the advantages derived from the drug. This is brought about by careful dosing, and by desiring the patient to carefully avoid swallowing the increased saliva. In persons who have had vomiting after large doses, this may be often prevented by employing moderate yet effectual doses. From some comparative trials which he has made with the internal administration of pilocarpin, Dr. Curschmann believes that the infrequency with which it causes vomiting, as compared with jaborandi, is principally due to its being used hypodermically, and thereby avoiding direct irritation of the stomach. Some persons, especially those who have been weakened by prior disease, complain of a sense of debility, but this usually soon passes off; but in others a complete state of collapse is produced, which may or may not be connected with prior vomiting. The possibility of this occurrence must always be borne in mind. It is dependent upon the amount of the dose and the susceptibility of the individual. It is oftenest met with in women and in those whose strength has been greatly reduced; and when the patient's constitution is not known, the first dose of the medicine should not exceed 0.02, while its effect should be watched for a quarter or half an hour. As far as the trials have gone, pilocarpin does not seem to act dangerously on

the subjects of heart disease, and, indeed, can be employed when no other diaphoretic procedure for so long a period would be ventured upon. Indeed, as a therapeutical agent for the production of diaphoresis, it is superior to any other method in use, being more easily employed, while its action is more certain and more complete, without being more or even so dangerous as most of these. Its superiority over the various sweating-baths in ascites, hydrothorax, asthma, etc., is most marked. It is true that diaphoretic treatment is thought less of than formerly; but in several cases the difficulty of its application, rather than its inefficacy, is the cause of its not being resorted to. Speaking from his own experience, Dr. Curschmann has found the pilocarpin very useful in œdema, in dropsy of the cavities from heart or lung disease, and in chronic nephritis, etc., and that after diuretic, drastic, and other means have failed. He believes that a large field for its employment may be found in pleurisy accompanied by serous exudation, both in promoting the absorption of this, and in preventing its re-accumulation after paracentesis. It is evidently indicated in chronic rheumatic affections, at least, so far as these are amenable to diaphoretic treatment.—*Medical Times and Gazette*, July 21, 1877.

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Aromatic Elixir of Glycyrrhizin as an Excipient for Quinia.

It has been proved by many experiments that ammoniacal glycyrrhizin, which is merely the sweet principle rendered soluble by combination with a small quantity of ammonia, possesses the valuable property of diminishing the sensibility of the gustatory nerve to the effects of such powerful bitters as sulphate of quinia, aloes, etc.

According to Mr. Joseph P. Remington, Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy (*Med. and Surg. Rep.*, Aug. 4, 1877), one of the most acceptable preparations is an elixir which contains, in addition to the sweet principle, certain aromatics which assist in rendering it more agreeable. A formula for its preparation is submitted:—

℞. Powd. coriander, powd. caraway, āā 108 grs. (7 grammes); powd. cinnamon, 93 grs. (6 grammes); powd. star anise, powd. tonqua, āā 62 grs. (4 grammes); powd. canella, powd. nutmegs, powd. cloves, āā 31 grs. (2 grammes); ammon. glycyr., 620 grs. (40 grammes); oil of orange, fresh, 31 grs. (2 grammes); alcohol, 16 fl.℥ (392 grammes); water, 16 fl.℥ (470 grammes); syrup, 48 fl.℥ (1857 grammes).

The aromatics are placed in a suitable percolator and exhausted with a menstruum composed of the oil of orange, alcohol, and water; the percolate is mixed with the syrup, the glycyrrhizin dissolved in a small quantity of boiling water and mixed with the liquid, and a sufficient quantity of water added to make the whole measure five pints.

If a more delicate preparation is desired, distillation may be resorted to, instead of percolation.

If the aromatics are not needed, and there is not time to prepare the above aromatic elixir, the apothecary can readily make an excellent substitute by dissolving ammoniacal glycyrrhizin in simple elixir, in the proportion of eight grains in a fluidounce.

The method of using the preparation is as follows: Pour into a tablespoon a dessertspoonful of the elixir, add to it the sulphate of quinia (two grains, for instance), and mix it. As soon as this is done, swallow the dose, and follow it with a teaspoonful of fresh elixir.

The advantages of administering sulphate of quinia in this way are—First. No anxiety need be felt as to its solubility in the juices of the stomach. Second. The necessity for prescribing patent or proprietary compressed, sugar-coated, or gelatin-coated quinine pills, with their varying degree of solubility, is removed. Third. Any apothecary can prepare the substitute elixir, extemporaneously, or the aromatic elixir can be kept on hand ready for use. The process, unlike that of the manufacturers of compressed and gelatin-coated pills, is not patented, but open to all. Fourth. Many patients, being unable to take pills of any kind, find no difficulty in taking this mixture. Fifth. No chemical decomposition

takes place when the sulphate of quinia is added to the elixir, the mixture being merely a mechanical one. The following form is submitted as a convenient one for prescribing:—

℞. Quiniæ sulphatis, gr. xxiv. Divide in chartulas No. xij. Sig. Mix one powder with a dessertspoonful of elixir, and after swallowing, take a teaspoonful of the unmixed elixir. ℞. Elix. glycyrrhizin aromat. f.℥vj. Sig. Use as directed. Or ℞. Glycyrrhizin ammon. gr. xlviij; elixir simplicis, f.℥vj. Sig. Use as directed.

Medicine.

The Therapeutics of Acute Rheumatism.

Last year Dr. MACLAGAN in an article in the *Lancet* announced the fact, deduced from some cases which he also published, that salicin has the power of controlling the process or processes which constitute rheumatic fever. Few would, perhaps, be ready to go so far as Dr. Broadbent, who, in the *Practitioner* for February, uses these remarkable words: "I have yet to see the case of genuine acute rheumatism, without complication, in which the pain is not entirely gone, and the temperature normal, after six consecutive doses of twenty grains, at intervals of an hour on two successive days." But there are few practitioners who have reported themselves as disappointed in the use of this drug, or, to put it at once strongly and carefully, more disappointed than in the use of quinine for ague. There has not been, in fact, such a consensus of medical opinion on any therapeutical question for many years as on the power of this drug, in one form or other, to cure rheumatic fever.

Our object in again giving prominence to the influence of salicin and its preparations is to direct special attention to the scientific bearings of the fact—for we may assume now the fact—that rheumatic fever is greatly curtailed and controlled by salicin. It will be remembered that Dr. Maclagan came to use salicin from holding a notion of the malarious origin of this disease. He inferred that as salicin had antiperiodic virtues like quinine, it would cure rheumatic fever. This may, and we think will, turn out to be a striking instance of a good conclusion being reached from false premises. We shall see directly that Dr. Maclagan was not the first to fancy an analogy between an ague and a rheumatic fever. Rheumatic fever we take to be essentially a diathetic disease, associated with a certain kind of constitution, occurring more in certain families than in others, and, unhappily, by no means confined to marshy situations. It is not a new fact in therapeutics to find a remedy capable of controlling such a disease, but it is a new fact to find a remedy so capable and powerful for this purpose. The introduction of the clinical thermometer gives much greater precision to our present clinical observations and conclusions. When we see a rheumatic temperature of 103° or 104°, with all the miserable accompaniments of pain, changed in two or three days to a temperature of 98½°, pain gone, and sleep and appetite returned, we are apt to think that we are witnessing a perfectly new fact in therapeutics. But there were probably great approaches to this success in the treatment of rheumatic fever with bark by Haygarth, Copland, and others, and with quinine by Briquet, Legroux, etc. Haygarth's words—and he probably learnt the use of bark in this disease from Fothergill, who used it for rheumatic fever on the ground of a supposed analogy between it and ague—are remarkable: "For many years I have been thoroughly convinced that the Peruvian bark has a much more powerful effect in rheumatic fever than any other fever, and that it does not even cure an ague so certainly and so quickly." Many physicians think that the alkaloid of bark, quinia, has similar power over rheumatic fever. The whole subject needs the scientific and sustained attention of a number of careful observers. It is of

great importance. Not only individual lives, but family histories, will be affected by the confirmation of the power of salicin or of quinia over the disease. But do let us settle the question once for all. The notes of rheumatic fever left to itself are very clear—pyrexia, sweating, joint-pains, extending distressingly over weeks. The physicians of the last century had hold of the notion that they could control this common disease. We have the same notion, coupled very much with the same theories and the same kind of medicines. But there has been a long night of uncertainty and vacillation. Let us have light on this question. It is a definite one, and it is very urgent. If it can be satisfactorily settled, therapeutics will be raised in the estimation of mankind. —*Lancet*, July 28, 1877.

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On Saltatoric Spasm.

Dr. W. R. Gowers, Assistant-Professor of Clinical Medicine in University College, contributes to the *Lancet* (July 14, 1877) the following interesting article:—

In 1859 Prof. Bamberger described, under the name of "Salatorischer Reflexkramf," two cases which were characterized by the occurrence of violent clonic spasm, chiefly in the legs, whenever the patient attempted to stand, the spasm ceasing as soon as the attempt to stand was relinquished. The effect of the spasm was to produce involuntary springing or jumping movements. Since 1859 three other cases have been described in which spasm of the same character was present, two by Dr. Paul Guttmann (in 1867 and 1876), and one by Dr. Anton Frey (in 1875), who added a *résumé* of the symptoms present in the four cases which had then been described (*Arch. für Psychiatrie*, Bd. v. p. 249.)

Two well-marked instances of the affection have come under my own notice. The first of these was a patient in the Hospital for Paralysis and Epilepsy, under the care of Dr. Radcliffe, who kindly permits me to publish my notes of the case from the hospital case-book. The second case occurred in one of my out-patients at the same hospital whilst an inmate of the country branch at Finchley.

Case 1. *Severe clonic spasm in legs and back on standing, and, when at worst, also on sitting, in a slightly hysterical girl; movements of limbs unimpeded; other similar attacks.*—Louisa B., aged twenty-one, admitted on the 12th of October, 1871. The only family history of nervous disease was that the girl's father was very intemperate, and had been three times confined in a lunatic asylum on account of persistent alcoholic delirium. The patient's previous health had been good, with the exception of two attacks such as she then suffered from. She had never had chorea or convulsive seizures, but, when a child, before eight years of age, she was liable to sudden attacks of giddiness, in which she would fall suddenly in the street, and have to be taken home. She had at times experienced the globus hystericus, and had on one or two occasions had an attack of laughing and crying. No history could be obtained of more severe hysterical symptoms. She commenced to menstruate at seventeen, and had done so with perfect regularity. At the same age she had an attack of "shaking in the legs on standing," which commenced gradually, continued for four months, and then ceased gradually. Its onset was preceded for a fortnight by a sense of weight in the legs. A year and a half later she had a similar attack, more severe than the first, lasting two months. The movements were violent, occurred only when standing, and ceased when she sat down. They were more severe in the right than in the left leg. The movement in these attacks was never so severe as to prevent her altogether from standing. No exciting cause could be assigned for either of these attacks, but she was at all times liable to severe emotional disturbance consequent on her father's drunken violence.

The attack for which she was admitted in 1871 commenced two months previously. A fortnight after a great alarm of the character just mentioned, she experienced a sensation of weight in the legs, and two or three days later the

spasm on standing commenced, and it gradually increased in severity until admission.

The patient was an intelligent, well-developed girl, having the aspect of good health. When sitting still nothing wrong could be observed. Her arms and legs were raised and moved steadily and well, and there was no obvious weakness. Voluntary resistance to passive movement was strong. There was no involuntary rigidity. Placing her hands on the seat of the chair on which she was sitting, she could raise herself by them quite steadily. She knelt without the least disturbance. As soon as she attempted to stand, and threw the weight of the body upon the feet, both legs became the seat of severe clonic spasm, synchronous in the two legs, jerking the body, arms, and head violently up and down. The heels were raised from the floor several inches, and came down on it with force, instantly to rise again. The spasm appeared, as far as could be judged, to involve all the muscles of the legs, and also those of the lower part of the back, since the trunk was jerked backwards at each spasm; but there was none in the muscles of the upper part of the trunk, the arms, or the head. It recurred rapidly; its frequency was not noted, but certainly two or three spasms occurred each second, the body springing upwards the instant the heels struck the ground on the descent from the previous bound. With the assistance of a nurse she was able to walk a few steps, the spasm continuing violent, and the right leg every few seconds giving way for a moment. Without assistance she could not even stand. The movements were so severe that in a few seconds she was breathless and exhausted. They continued as long as she attempted to stand, and ceased instantly when she sat down, and she could then move the legs steadily. When lying, firm pressure against the soles of the feet caused slight clonic spasm, but no violent muscular contractions. No pain in the muscles accompanied the spasm, but it caused pain in the lumbar spine. She complained, however, of a continual dragging sense of weight in the legs. The arms were free from all spasm whilst the legs were jerking, but she described occasional sudden attacks of slight tremor in the arms, independently of any spasm in the legs. These were not, however, witnessed, and it was doubtful whether they occurred spontaneously or were excited by movement of the arms. Ordinarily, movements of the arms caused no tremor. The saltatoric spasm presented no variation in intensity at different times of the day, but was rendered more severe by emotional excitement.

A fortnight later, the spasm continuing, she complained of much pain in the back on movement and on sitting up, felt especially at the top and bottom of the back, and relieved by the recumbent posture. There was considerable tenderness to pressure in the lower cervical and lower dorsal regions. The recumbent posture was, therefore, maintained for several days, but it did not affect the movements, which became more severe, so as to prevent her from standing even with assistance, almost throwing her down, in spite of a nurse's support, when she attempted to stand. Less support seemed afforded by the right leg than by the left, so that there was an evident tendency to fall to the right. The spasm spread also to the muscles of the upper part of the back and neck, so that the head was jerked backwards. Soon after the commencement of this pain in the back, it was found that the spasm came on in the back on sitting or kneeling, as well as on standing. There was still, however, no spasm in the arms. It was now noticed that there was slight jerking of the right leg when it was moved in bed, although it was still moved freely, and passive motion could be opposed with considerable force. Various remedies had been tried, but without effect on the spasm in the legs. Blistering to the spine, however, lessened the spinal pain, and with it the spasm in the head and back on sitting ceased. The saltatoric spasm continued without diminution, and she left the hospital in February, 1872, in nearly the same condition as when she entered it, the slight spasm with all movements of the right leg continuing.

She was not seen again for two months, and was then quite well. The history which was given of her recovery was that the tremor on moving the right leg continued for a month after her return home, and then one day ceased sud-

denly. She was surprised at its sudden cessation, and was afraid to move for fear of bringing it back. The spasm on standing continued for three weeks more, and one morning she found there was less shaking, so that she could just manage to stand, and then, during the course of half an hour, the shaking became less and less, until it ceased. When seen there had been no return. There was a little tremor on standing, but no spasm such as had existed before. She had taken hypophosphite of soda and cod-liver oil, but had been dosed by her mother with alcohol. She had taken considerable quantities of stout and rum and milk. The effect of this had apparently been to make her sleep very soundly, and on the day or two before the cessation of the movements she had been very drowsy all day, falling asleep, for instance, at meal times, and even at the breakfast table. I could not ascertain whether this was to be regarded as the effect of the alcohol or as the evidence of a peculiar state of the nervous system.

Six months after her recovery she again complained of pain in the head, and a sensation of heaviness in the limbs, soon followed by a return of the spasmodic movements on standing, and she passed through another severe attack, in all respects similar to that just described, except that the movements never spread to the head. The attack lasted about seven months, and ended gradually. One day she found the plunging on trying to stand a little less severe. Next day, on trying again, she fell, but on a second attempt she succeeded in standing, although unsteadily from the spasm. Each succeeding day she improved, although for several days there was a little striking of the feet against the ground. In about a week she could walk fairly well, and rapidly regained strength. From that time to the present (1877) she has had no fresh attack. The only nerve-disturbance from which she suffers is an occasional attack of slight general tremor coming on spontaneously, lasting for a quarter of an hour, and then ceasing. The tremor seems to her to begin in the chest, and spread thence to the arms and legs.

Case 2. *Violent clonic spasm in legs on standing, with slight weakness of right leg; onset with an epileptoid seizure and temporary loss of sight; the spasm ceasing after two days.*—Annie L., aged ten years, had suffered from "fits" for twelve months. No family history of nerve-disturbance could be obtained. The first fit occurred soon after a fright. In the attacks she fell suddenly, and lay quiet and apparently unconscious, but was quickly brought round by a douche. Under treatment in the hospital (where she was under the care of Dr. Radcliffe) the attacks ceased. A month after the cessation of the attacks, she was admitted to the country branch under my care. She appeared quite well for a week, and then suddenly had an epileptoid seizure, of which the following account was given: During the evening she had been noticed to start occasionally while standing. At half-past seven she was observed suddenly to be falling in a fit. She was caught by the nurse, who was close to her. Her arms and legs were stretched out, rigid, and quite steady; her face was red; she seemed quite unconscious; her eyes were closed. She was placed on the floor, and lay there for a quarter of an hour, when she was found to be less stiff, and some signs of returning consciousness were noticed. Presently she seemed conscious, but was still somewhat rigid; the rigidity gradually passed away. She complained of a severe pain between the shoulders and down the back. She was then raised into a standing posture, but as soon as the soles of her feet touched the ground violent jumping movements occurred, so severe as to throw her down. When placed on a chair she was still. A little general tremor was noticed, but there was no jerking. As she recovered consciousness she rubbed her eyes, and said she could not see, and appeared for half an hour to be quite blind. She then went to sleep. Slept pretty well all night, and awoke in the morning able to see as usual. On trying to stand the same jerking occurred, though rather less than on the previous evening. During the morning the spasm increased in severity. I saw her in the afternoon. There was then considerable rigidity of the legs, passive movement being opposed at all the joints. Sensation seemed a little impaired, but it was not easy to judge accurately. She felt a gentle touch on either leg, but said she "did not feel it well." A pinch was felt, but not acutely. There was

certainly no hyperæsthesia. While sitting, her legs were perfectly still. On attempting to stand, as soon as the weight of the body was thrown on to the legs, the legs were the seat of violent clonic spasm, simultaneous in all the muscles affected and in the two legs, which jerked the whole body and arms up and down. It was not easy, so rapid and forcible were the movements, to say what muscles were involved. Certainly those below the knee were not. The feet were kept flat on the ground, and the motion was at the hip and knee-joints, especially the former. The muscles of the back seemed also to be involved. When she sat down, all the spasm at once ceased. No "tendon reflex" could be produced by putting the gastrocnemius on the stretch in the way which excites it so readily in lateral sclerosis of the cord. When lying on her back she could raise the left leg slowly from the couch without any unsteadiness, but when doing so there was a little jerking in the right leg. The right leg was raised with more difficulty than the left; it jerked a good deal in all parts. On supporting the thighs, extension of the knee-joint still caused some jerking of the right leg. She was unable to extend the toes of the right foot, but could move those of the left quite readily.

Bromide of potassium and tincture of belladonna were ordered, and sponging of the spine with hot water. Little immediate relief, however, followed. The next day her condition was nearly the same. In the evening she was placed in a hot bath, wrapped up in blankets, and made to sweat. She went to sleep, and in the morning woke up perfectly well. She could move the right leg steadily and well, and could stand without the slightest jerking. There was no relapse.

Since no account of saltatoric spasm has, I believe, yet appeared in English, it may be interesting to give a brief outline of the five cases which have been recorded in Germany. The first two cases were recorded by Bamberger.[1]

Case 1 was that of a young man, aged nineteen, in whom the affection appeared during convalescence from an attack of pneumonia, he having previously been apparently free from nervous disturbance. One day, on attempting to stand, the moment the feet touched the ground the muscles of the leg passed into a state of rigidity, accompanied by violent shock-like concussions, the body being thrown upwards whenever the feet touched the ground with such force that, if not held, he would have been thrown down. As soon as he sat down the spasms at once ceased. A feeling of discomfort, but no pain, accompanied the spasm. If, when lying, the feet were pressed against the footboard of the bed, there were the same tonic rigidity and clonic spasms as in standing, though less intense. Momentary tickling the sole caused the slow development, during two or three minutes, of contraction of the muscles of the calf, leg, and ultimately of the arm, and, at a later period, of the other leg also. When lying all movements of the legs would be performed well. Sensibility was normal. There was no tenderness or other abnormality of the spine. The cerebral functions were undisturbed. Two days later there was some apparently spontaneous spasm in the face, drawing outwards the angles of the mouth, and very strong action of the heart. Ten days later, there was marked dyspnœa, followed in a day or two by continuous quick alternation of contraction and dilatation in both pupils. The patient complained of spontaneous tremor in the right leg, and the reflex excitability had increased, so that the muscular contractions could be elicited by tickling the leg as well as the sole. After the dyspnœa had been intense for several days it lessened under the influence of morphia, the reflex contractions and spasm were slighter, and then, on attempting to stand, it was found that the reflex spasm had entirely ceased. A few weeks afterwards he passed through a mild attack of typhus, and recovered without any return of the affection, the duration of which had been just eighteen days.

Case 2.—The patient was a cook, aged thirty, suffering for some time from the symptoms of gastric ulcer. After the symptoms improved, she complained of great exhaustion, and that she could not stand. On attempting to do so, the same phenomena occurred as have been already described: the body was

[1] Wiener Med. Wochenschrift, 1859, Nos. 4 and 5.

thrown upwards with a violent movement whenever the soles of the feet touched the ground. The muscles of the trunk and head were involved, as well as those of the legs. On lying down these clonic spasms ceased, but for a little time there was some tetanic rigidity of the whole body, with slight tremor of some muscles; in a few minutes this had passed away, and then nothing wrong could be discovered. Tickling the soles of the feet produced no movements. On pressing the soles of the feet against the foot-board of the bed, there were slight movements, especially in the arms. The eighth, ninth, and tenth dorsal vertebræ were tender, but pressure on them excited no contractions. The affections increased until, even on moving in bed, opisthotonos occurred, and the arms became spasmodically contracted. Now and then there were spontaneous spasms in the legs. Soon, however, improvement occurred; in a fortnight she could sit up in bed as before; but this state remained stationary for a long time—nine months. Then suddenly there set in a condition of general rigidity, which lasted several days and ceased, and after its cessation the power of walking suddenly returned. Several months afterwards she had another attack; symptoms of tetanus were succeeded by a sleepy state, which lasted for two days, followed by concussions on an attempt to stand, similar to but less severe than those of the first attack.

CASE 3. (Recorded by Dr. Guttmann.[1])—The patient was a man aged forty-six; one brother was epileptic, and another had died of apoplexy. At thirty-one he had a feverish attack, with hallucinations of vision, and the following year much severe headache. When forty-five years of age he suffered from rending pains in the limbs for some months, and then occurred the first symptom of the spasmodic affection—tremor of the left leg, increased by putting the sole to the ground. A fortnight afterwards the spasm occurred in the right leg, and still occurred only on attempting to stand. It varied from time to time, sometimes disappearing for a few days. When under observation, a year after the onset, there were violent spasmodic jerks upwards of the body whenever he attempted to stand, ceasing as soon as he sat down. The body was raised about six inches by the spasmodic movement, sometimes in a vertical direction, sometimes with an inclination laterally. If not supported, the patient would in a few minutes fall exhausted. In severe paroxysms the neck and back were arched backwards; the movements were lessened by support on a stick, but then the back was bent backwards by the spasm. There were no spasmodic movements when the patient was sitting or lying, nor if, when lying, the feet were pressed against the foot-board of the bed, nor if, when sitting, they were stamped upon the floor. The spasm was most intense upon rising in the morning, continued severe during the forenoon, lessened during the afternoon, and was very slight in the evening. It varied also from time to time; on some days he would be almost free from it. It was greatly increased by emotion. When he could walk about the country pretty well, it occurred at once if he attempted to walk in a crowded street. When not liable to it, its onset was preceded for a few seconds by an "aura"—an ill-defined but unpleasant sense of contraction, beginning in the feet and passing up the spine to the occiput. When he felt this, unless he sat down, or if when sitting he tried to stand, the spasm invariably ensued. He had occasionally shifting pains in the spinal column, and at times tenderness of the seventh cervical and fourth and sixth dorsal vertebræ, and at one time pressure on the former would bring on slight clonic spasm in the legs and back, even when sitting, accompanied by the "aura" which preceded the spasm. Various remedial agents were tried, including the voltaic current, atropine and curara, but without effect. The symptom continued without change until the patient died of typhoid fever five years later.

CASE 4. (Recorded by Dr. Anton Frey.[2])—The patient was a man, aged seventy, in whom the affection had come on while weakened by an attack of bronchitis. The spasm began suddenly, but occurred at first only when the right leg was placed on the ground. Rheumatic pains in both legs and the

[1] Berlin. Klin. Wochenschrift, 1867, No. 14.

[2] Archiv für Psychiatrie, Bd. vi., 1875, p. 249.

left arm preceded the onset for two months. Tremor on movement in right leg and left arm was the first symptom. The affection reached its height in about ten days. When developed, standing was impossible. As soon as the soles touched the ground violent spasms occurred in the legs, raising the heels several inches, not spreading to the arms, synchronous in the two legs at first, but in a few seconds alternating. On sitting down, the movements ceased at once. Very remarkable attacks of clonic spasm occurred in all four limbs (but not in trunk or head) on the slightest passive or active flexion or extension of the left arm or right leg, the clonic spasm being very violent, involving all joints of the limbs, and recurring about 300 times a minute. The spasm began in each case in the part of the limb moved, spread thence to the rest of the limb, then to the corresponding limb on the opposite side, then to the other limb of the opposite side, and, lastly, to the other limb of the same side, and ceased in the reverse order. Immediately after ceasing a fresh movement would bring on another attack. Movements of the left arm and right leg caused no spasm. No cutaneous irritation produced or arrested the spasm, but later on in the case, when the spasm had become slighter, firm pressure on the muscles near the elbow or above the knee arrested the spasm excited by movement. Treatment had little influence on the affection, and three months later the saltatoric cramp was unchanged, although the attacks of tremor were less severe. The muscles of the left arm and right quadriceps extensor had, however, undergone very considerable atrophy, that of the arm being extreme.

Case 5. (Recorded by Dr. P. Guttmann.[1])—The patient was a soldier, aged nineteen. The onset of the affection was rather sudden, the first symptoms being noticed the day after an exposure to cold—sudden giddiness, with tremor in the legs on an attempt to stand, increasing during the next few days to the characteristic severe clonic cramps on standing, throwing him with violence from the floor each time the soles of the feet touched it. The projection was sometimes directly upwards, sometimes with an inclination backwards, determined by a contraction in the muscles of the back. It appeared to begin in the muscles of the legs, and then spread to those of the thigh. On lying down contractions occurred in these muscles for a few minutes and then ceased. These could also be elicited by a blow on the sole, and in a slighter degree by a blow elsewhere on the leg, and spread to the other leg a second or two after their commencement in the first. When lying down all movements could be executed freely, and with due force. The last cervical and last dorsal vertebræ were tender, but pressure on them caused no spasm. For a time there was no alteration in the patient's state. After three months' duration the spasm on percussion became slight, but the saltatoric spasm persisted for nine months, and then gradually ceased.

(To be concluded.)

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A Means of arresting Hooping-Cough.

Lasinski recommends (*Deutsch. Med. Wochens.*, No. 2, 1877) the insufflation into the larynx of the patient of a small quantity of a powder composed of 30 grains of salicylic acid, 15 grains of quinine, 7 grains of bicarbonate of soda, and 7 grains of sugar. This should be done twice daily, and the above quantity should last about ten days. He adopted this treatment in fifteen cases of severe hooping-cough, and all were cured in periods varying from eight to thirty days.—*The Practitioner*, July, 1877.

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On the Treatment of Angina and Membranous Croup, by Insufflations of Nitrate of Silver.

Guillon has treated diphtheritic pharyngitis by insufflations of nitrate of silver. He proceeds as follows (*Gazette Médicale de l'Algérie*, May 20, 1877). Pure nitrate of silver is dried by exposure in a silver spoon to a proper degree of heat over the flame of a candle or some live coals. The insufflator, by the

[1] Ibid., Bd. vi., 1876, p. 378.

aid of which the powder is projected into the mouth as far as the bronchi, is composed—1, of a wooden cylinder, in which the powder is placed; 2, of an India-rubber bag, which acts as a bellows; 3, of two tubes, one a straight one, conducting the powder in a direct line to the pharynx, the other curved downwards, to direct it towards the larynx. It is important that the portion of the cylinder to which the India-rubber bag is fixed should have sufficiently large apertures for the air to enter it quickly, and to be expelled from it with equal ease, so as to drive the powder outwards. The other part, to which the duplicate tubes are adapted, should be fitted with a small sieve, so that the powder may be properly divided when it leaves the instrument, and not fall in a mass on the affected part. During this rapid and simple operation the patient's head should be kept immovable, and thrown backwards. The operator, placed in front of and a little to the right of him, depresses the tongue with a spoon held in the left hand, and holds the insufflator with the other hand. Rapidly compressing the India-rubber bag, and pressing against the superior dental arch with the right hand tube, he projects the powder on the diphtheritic membranes and on the mucous membrane of the pharynx above and below, so as to prevent their extension to the nasal fossæ, the larynx, and the trachea. The India-rubber bag must be forcibly compressed and made to semi-rotate five or six times, which facilitates the projection of the powder. As the insufflation is performed in two or three seconds, and as the pain produced by the nitrate of silver powder only shows itself a little later, the first insufflations must be made when the patient draws a deep breath. In this way the powder penetrates into the larynx, and arrests the croupal affection at the outset, before the pain is developed. It is understood that some symptoms of incipient croup should be present. When the insufflation is finished, the tube of the insufflator should be cleaned, and the nitrate of silver powder put away in a small, well-stoppered bottle. As the diphtheritic membranes sometimes reappear, Dr. Guillon uses astringent gargles to prevent their development; and, if these means be not adequate, he has recourse to a fresh insufflation.—*London Med. Record*, July 15, 1877.

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On the Treatment of Diphtheria by Cubebs and Copaiba.

Dr. TRIDEAU, of Andouille, in the *Gazette Hebdomadaire* for March 28, 1877, gives a detailed description of his treatment of diphtheria by cubebs and copaiba. He lays down the following rules for the use of cubebs: 1. The cubebs should always be finely powdered at the time of use, and suspended in syrup or in strongly sugared water. 2. It should be given every hour, so that the system may be constantly under the influence of the medicine. The doses should be from 120 to 150 grains for children more than a year old, and from 375 to 600 grains for adults during the twenty-four hours. 3. The use of the remedy should be continued some days after the disappearance of the false membranes; as a rule, three or four days, especially if the glandular swelling persists. 4. If there be no improvement at the end of three or four days, the dose must be increased, whatever may be the age of the patient. 5. The use of the drug must be renewed and continued perseveringly on the least reappearance of the membrane. 6. If diarrhœa supervene, a little syrup of poppies should be given if the patient be a child, or tincture of opium if an adult. 7. A strengthening diet, such as milk, soup, and eggs should always be associated with this treatment, and liquid or semi-liquid aliments if there be paralysis of the larynx. 8. The progress of the disease must be watched very carefully, so as to see if the medicine agrees with the patient. Dr. Trideau employs the following formula: firstly, powdered cubebs, 12 to 15 grammes; simple syrup, 100 grammes; water and Malaga wine, 20 grammes; one, two, or three of these mixtures to be taken in the twenty-four hours, according to the age of the patient and the severity of the disease. Should the disease not be amenable to cubebs alone, copaiba in the following form should be given concurrently with it, especially in adults; Mialhe's solidified balsam of copaiba, 25 centigrammes; powdered cubebs, 15 centigrammes; for one pill; 20 or 30 to be taken in the twenty-four hours. Only one at a time must be given, and the

number prescribed must be administered the same at equal intervals in the twenty-four hours. The copaibic scarlatiniform eruption, which generally supervenes after the more or less prolonged use of these pills, always coincides with the cessation of the disease. Very few exceptions to this law have been observed in the case of very young children. Some teaspoonfuls of syrup of poppies should be given to children, or some laudanum to adults, with the copaiba, to prevent diarrhœa. If these pills be used for children, as many should be given daily as they are years old. If there be difficulty in swallowing them, they should be given broken in pieces in a little marmalade or baked apple. The cubeb draught should be continued according to the directions given above. If, for any reason, the copaiba pills alone be given, the number above prescribed must be increased at least a third, or even doubled; but only one should be given at a time, at equal intervals during the day.—*London Med. Record*, July 15, 1877.

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On the Bursting of a Cavity in the Lung into the Vertebral Canal.

Dr. G. v. Dall' Armi reports this interesting case from the wards of the Julius Hospital at Würzburg, in the Munich *Aerztliches Intelligenz-Blatt* for September 5, 1876 (No. 36). Some notice of the case is contained in No. 48 of the same journal for 1875. The patient, E. Reinhardt, aged 20, had lost two sisters in infancy, one brother now suffers from phthisis, and her father was phthisical. She had measles at the age of six years. From September, 1874, she suffered from a violent cough with copious mucous sputa, and stabbing pains in the right side. In October she had pain in the right arm and back which gradually subsided, giving place to loss of power in the right arm. Passive movements were not painful. Applications of electricity were followed by almost complete recovery of motor power, and she was discharged from the surgical wards; but the pain in the back returning again after a chill, she was readmitted as a patient. She suffered at the beginning of January, 1875, with pains in the left arm also; in the lower extremities, back, and both arms, she had crawling feelings, cramps, and tremors. By the middle of January, she had almost complete paraplegia, then pain in the left side of the forhead. On coughing, the patient felt a distinct rattling in the right half of the chest. Night-sweats, especially at the back of the head, occurred after the new year, with want of sleep. The appetite remained good, but the bowels were constipated. On February 2, 1875, she was transferred to the medical side. Her loss of flesh was most apparent in the arms, especially in the right forearm, and in the thenar and hypothenar eminences. The right arm, even above the elbow, was less fleshy than the left. On extending the hands, there was a good deal of tremor, most marked on the right side. Fibrillary cramps were noticed in the ball of the thumb. Her grasp was very feeble, but the ordinary movements of the arms were pretty fairly done. The lower extremities were better nourished than the upper, but their powers of motion were very imperfect, especially in the right leg. There was slight tremor, even when they were supported. Passive movements gave no pain, but passive flexion of the foot excited strong spasmodic contractions. From the angle of the ribs outwards, the patient had a numb feeling; for slight touches, the sensibility of this region was diminished; the right side more than the left in both cases. On both forearms the points of the compasses were felt as two at 4 or 5 centimetres apart (1.6 to 2 inches), and the same on the skin of the chest—more definitely on the left side. From the navel downwards, even at 15 to 20 centimetres (6 to 8 inches) apart, only one impression was generally felt. The reflex irritability on the lower part of the legs was found to be greatly increased, sharp pressure giving rise to severe muscular cramps. Faradic contractility was nowhere lost by the muscles, but it was felt less strongly in the ball of the right thumb than in the left. The pupils were somewhat dilated, particularly the right one; both acted fairly. The uvula deviated a little to the left. She bent the head forwards imperfectly. Passive movements of this kind gave pain in the region of the first dorsal vertebra. The spinal column in the dorsal region was slightly bowed towards the left, the second dorsal vertebra

was a little depressed, the first three dorsal vertebræ, especially the first, were tender on pressure over the spinous processes. On the left side, the supra-clavicular region was somewhat flattened; the right corresponding region was contracted. There was more feeling of resistance (than on the left), and a tympanic tone (on percussion). Over the upper border of the trapezius, pressure elicited here and there a kind of crackle (*quetschen*), which the patient called a "rattling." On deep breathing, the left chest expanded better than the right. There was bronchial breathing at the right apex, with mucous *râles* in front; percussion there was painful. With the exception of the second sound over the pulmonary valves, which was louder than normal, the position and tones of the heart were not abnormal.

The patient could not help herself at all. She complained of great weakness, tremblings, cold chills, etc. Micturition was always painful. In the course of her disease there was some improvement both in motion and sensation, especially on the left side, but the main features were unaltered. The crackling in the right suprascapular region was sometimes more evident, sometimes less so. At the end of February, at the level of the shoulder, it reached to the spinous process of the vertebra; whilst it could be felt downwards, though less plainly, to the inferior angle of the scapula. Cough, expectoration, and sweatings all became aggravated. The catamenia, absent since November, 1874, returned on March 30. The physical signs were as follows: On the right side of the chest, above, there was a tympanic tone, the pitch of which was altered by opening and shutting the mouth. At the third rib the tone became deeper, and had a metallic character; which it retained down to the base of the lung. From the third rib, bronchial breathing was heard, with coarse metallic mucous *râles*, most at the base. Vocal resonance was intensified all over the right lung, particularly between the third and fifth ribs. Bronchophony was heard all over the right lung. Percussion behind was as in the front. The legs were very œdematous, particularly at the joints. Pyrexia and headache were frequent. On April 20, she complained of sore throat. The uvula, pharynx, etc., were swollen and red. On the 26th, she had much pain in the swollen legs. There were traces of albumen in the urine. On April 29, there were great dyspnœa, tracheal *râles*, respirations shallow and painful. On May 1, the patient was comatose. The sputa were copious. Pulse 150. Tongue coated and tremulous. On May 2, there was a very evident tympanic tone over the second and third ribs and thereabouts on the left side; breathing was bronchial there. The head seemed fixed. The lower extremities were motionless and painful. On May 4, she had a fresh attack of dyspnœa, with downfall of temperature. The pulse was quickened as before. She died on the 5th.

The temperature exhibited the type of a remittent continuous fever; the morning temperature varying from 99.6° F. to 101.2° F., the evening ones between 102 5° F. to 104° F., the latter figures being common. In one of the rigors, 105.8° F. was exceeded. From the 2d of May to the 4th, the temperature fell, the morning temperature on the latter day being 96.8° F.

At the *post-mortem* examination, the spinal canal, being laid open, exhibited granulations and muco-purulent fluid on the posterior bony wall. From the third cervical to the second dorsal vertebra, similar granulations were found on the dura mater. The transverse processes of the seventh, sixth, and fourth cervical vertebræ, and the heads of the first, second, and third ribs, were bare of periosteum, and the bones carious and necrosed. In the right suprascapular region, between the spine and the muscles, a cavity full of pus was discovered, extending above and below. On opening the membranes, the spinal cord was seen to be very pale in the upper part, but the veins in the cervical swelling were much gorged. The arachnoid was much thickened; the bloodvessels of the membranes were injected. A transverse section of the cord at the level of the second cervical vertebra, showed the anterior cornua to be far less prominent than usual; and, on both sides of the posterior commissure, there was yellowish discoloration. In the lower half of the cervical swelling, there was a grayish-yellow deposit in the left anterior cornu. Similar nodules and perivascular changes were found in the dorsal part of the cord—even in the nerves

of the cauda equina, and lower portion of the cord. Pressure with the finger in the right supraclavicular region elicited cracklings. The right pleural cavity contained thin purulent fluid. The right lung was adherent at the apex. There was some pericardial effusion. The apex of the right lung was puckered, and exhibited a series or system of caverns (cavities). The upper lobe of this lung was airless, and studded with small nodules and cavities (*sic*). The cavity at the right apex was found to be in communication with the above-named abscess in the spinal canal. There were a little fluid in the left pleura, fatty degeneration of the liver, and a few gray nodules in the left lung, bed-sores on the loins, etc.

It is far more common for cavities in the lung to open into the pleura or into the pericardium than into the spinal canal. Cruveilhier gives one such case (*Gazette Hebd.*, tome iii., 1856; Schmidt's *Jahrbücher*, Band xci., s. 69) in a woman, aged 57 years, in connection with the fourth and fifth dorsal vertebræ and fourth rib on the left side. In the case recorded here, the sputa were examined for fragments of bones, as was recommended by Friedreich (Virchow's *Archiv*, Band xxx.), but none were found. The pains were doubtless due to neuritis and meningitis combined. Some symptoms (as those of the pupil) were most likely due to the sympathetic. The increased reflex irritability gave rise to a suspicion of analgesia. Rosenthal relates a case of analgesia with disease of the vertebræ.—*London Medical Record*, July 15, 1877.

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On the Use of the Faradic Current (Induction Current) in Certain Forms of Dilatation of the Stomach.

No. 44 of the *Berliner Klinische Wochenschrift*, October 30, 1876, contains a paper on this subject by the Drs. G. Oka and J. Harada, who are assistants to Dr. Wernich at the Academy Hospital in Yeddo (Japan). They remark that the use of the stomach-pump is too complicated a proceeding in the commoner or slighter forms of this disease (or symptom). They were first recommended to use faradization by Dr. Wernich, who showed them a paper by Fürstner recommending it, in the journal above named, No. 11 for 1876. Dilatation of the stomach often occurs in Japan. Europeans in moist, warm, subtropical climates often suffer from it, and seem to get good from alcohol and nux vomica. These remedies do not suit the Japanese. There are a chlorotic form, common in puberty; and a special form, common in Japan and other neighbouring islands, which seems the initial stage of kakke or beriberi. The cases submitted to this treatment were 13 in all, as follows: three of chronic gastric catarrh, with slight atony; two of old gastric ulcer with partial dilatation; four of chronic constitutional dyspepsia with atonic stomach; four of hysteria with chronic dilatation of stomach. Five were quite cured, and two derived no benefit; but one of these was complicated with diabetes and chronic gastric catarrh; the other was chronic gastric catarrh with hysteria. Details of the cured cases are given. The Japanese are said to eat much indigestible food, or slow of digestion from its nature or from the mode of preparation.—*Lond. Med. Record*, July 15, 1877.

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On a Case of Abscess of the Liver, with Successful Operation.

This case is reported and commented on in the *Commentario Clinico di Pisa*, by Dr. Agostino Paci, Surgeon to the Hospital of Sarzana, who here writes a most able paper on the causes of, and various operative methods employed in, hepatic abscess.

The patient was a widow, aged 65, with a sound family history. She married at 21, and, at 24, suffered from pericarditis and metritis; at 33 she had hepatitis, for which she was repeatedly bled. The principal symptom was pain in the right hypochondrium, which lasted for years, but always yielded to leeching. In 1859, at the age of 48, she recovered, and passed several years in good health. Seven years later, gastro-duodenal catarrh came on and led to jaundice, lasting a couple of months. After that, she suffered gastralgia and

colic repeatedly. Eventually, in 1876, at the age of 65, she was seized with sudden and severe pain in the right hypochondrium, aggravated by coughing and breathing, and considered due to hepatitis.

The case was carefully watched for two months; the diagnosis of abscess was established more and more; and, finally, operation was decided upon. The procedure chosen was that of incision just outside the nipple line below the level of the eighth rib, to an extent of two inches, made gradually through the layers of the abdominal wall. The parietal peritoneum was found to be adherent to the liver at the spot, and much greenish creamy pus escaped. The orifice was plugged with rag, covered with a "linseed plaster" bound on with a roller. The fever declined at once from 103 to 100, but the discharge of pus continued in great quantity. Profuse sweating occurred during sleep, and continued a month, during which time several long fibrous sloughs were pulled out of the wound. In five and a half weeks the wound was cicatrized, and the patient convalescent, suffering no more inconvenience than some sensation of dragging at the spot incised, no doubt due to adhesion, and being, it was hoped, of a temporary nature.

[Perhaps it may not be amiss to reflect for an instant upon the effects of linseed poulticing and plugging wounds with lint. The latter alone prevents the exit of the discharge, either partially or totally, and every clinical surgeon knows that inflammation is aggravated when the distension of any abscess or other cyst remains unrelieved. The former, a hot oily application, draws blood to the part, and also increases the inflammation. The pus, or whatever fluid be thus momentarily set free, is once more confined within its cyst, but with the additional feature that decomposition is at once set up in it by exposure. The outward stream, which the natural collapse of incised parts would favour when let alone, is thus arrested by the plug; septic conditions are gratuitously set up in the retained fluid; and, as if to leave nothing undone in the artificial inflammation, a hot, fat, impervious poultice is laid over all.

The least that can happen is a profuse suppuration with corresponding fever, with or without sloughing. If the constitutional state be bad enough, septicæmia, phlebitis, and pyæmia, or erysipelas will occur; but all these possibilities notwithstanding, it is fortunate that many patients survive in spite of the risks incurred.

There are surgeons without number who are never weary of dinning into our ears, "avoid filthy poultices; secure the perfect drainage of your wound," to their own everlasting credit; yet the practice continues even in high places. This complaint is directed against methods, not against persons, much less against the able gentleman who has so faithfully reported the above case; but it is a complaint for which there is still much need in the interests of antiseptic surgery, which is really independent of disinfectants and coverings of all kinds.

If the orifice of this wound had been left without immediate covering, and had been simply greased to prevent evaporation and too early scabbing, suppuration would rapidly have ceased, probably within a week, and given place to pellucid serous ooze, and to more speedy but non-suppurative granulation.

It is the nature of these things to heal, and the duty of the surgeon mainly to avoid hindering nature's process (by keeping his fingers away), and only to supplement it, which he occasionally can, to the small degree here indicated. —*Rep.*]—*London Med. Record*, July 15, 1877.

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Case of Ascites, tapped on five occasions, cured by Copaiba Resin.

Owen R., aged forty-five, a furnaceman, was admitted into the Liverpool Royal Infirmary, under the care of Dr. Glynn, November 11, 1876. He stated that he had enjoyed good health until two years before, when he commenced to suffer from morning sickness, which continued more or less. For the seven years before admission he had taken a great deal of beer, but very little spirits. His occupation exposed him to considerable heat, so that he frequently drank eight or ten pints of beer before breakfast. About a fortnight previous to

admission he vomited a large quantity of blood, and passed blood per rectum for about three days; after this his belly commenced to swell, and in ten days or a fortnight it became enormous. His urine was greatly diminished in quantity, high-coloured, and thick.

On admission there was extreme ascites; he was emaciated, sallow, and slightly jaundiced; urine 16 oz. in twenty-four hours, high-coloured, acid, sp. gr. 1025, no albumen.

After paracentesis the liver was found to be contracted, and nodulated on the lower border. The spleen was increased in size. He was ordered a mixture containing acetate of potash and tincture of digitalis, which he took until December 7, but the urine did not increase in quantity, never reaching more than 30 oz. in twenty-four hours. Twenty-grain doses of copaiba resin, with a little rectified spirit and mucilage, every four hours, were then given. This he took until December 27; the urine increased in quantity, varying from 60 to 90 oz. in the twenty-four hours. On this day (27th), although the urine had been steadily increasing, as he suffered considerably from dyspnœa from pressure, paracentesis abdominis was performed; 20 pints 8 oz. of clear fluid were removed.

The resin was discontinued, and ten drops of tincture of perchloride of iron were given three times a day until the 20th of January, when the peritoneal cavity was again quite full. There was considerable dyspnœa, and the urine was reduced in quantity to about 14 oz. a day. Paracentesis was resorted to, and twenty-nine and a half pints of fluid were removed. The iron was stopped, and he was put on fish diet with 4 oz. of gin, and he was ordered to inhale thirty drops of oil of juniper three times a day; a strong infusion of digitalis was also applied to the abdomen. From the 20th of January to the 2d of February the urine averaged about 25 oz. daily; the peritoneal cavity refilled, and on the latter date was tapped, thirty-two pints of fluid being removed. From the 2d to the 11th of February he took a mixture containing spirit of juniper and infusion of digitalis; the urine did not increase (average about 22 oz.). and the abdomen became full and tense. On the 11th paracentesis was performed, and twenty-nine pints of fluid were removed. From the 11th to the 24th February all medicine was omitted; the gin was increased to 6 oz., as he was very weak; the urine averaged about 30 oz. On the 24th it was necessary to tap for the fifth time, twenty-four pints 10 oz. being removed.

He was again put on the resin of copaiba, twenty grains every four hours. The fluid reaccumulated; at one time there was great distension, but the urine gradually increased in quantity. On Feb. 26, 42 oz.; March 3, 55 oz.; 10th, 75 oz.; 15th, 87 oz.; 25th, 100 oz.; 30th, 140 oz.; April 2, 140 oz.; 6th, 130 oz.; 11th, 206 oz.; with an average of 150 oz. a day until the 16th of April, when the peritoneal cavity was quite free from fluid. The resin was then omitted, and the patient was ordered fifteen drops of tincture of perchloride of iron three times a day. He rapidly regained strength.—*Lancet*, July 14, 1877.

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Diagnosis of Diabetes.

In a clinical lecture upon this subject (*Gaz. des Hôp.*, May 22), Prof. HARDY, after narrating the particulars of a case of diabetes, made some useful practical observations upon the signs by which it may be recognized. Some thirty years ago he observed that almost the only physical characteristic relied upon was the sugary taste of the urine; but since then the progress of science has enabled the practitioner to dispense with this procedure, chemistry having placed at his disposal a number of means, of which the most simple, which are also those most employed, may be mentioned. First, there is caustic potash, either in solution or in granules or solid fragments; heated with urine containing sugar, it immediately produces a more or less yellow or brown colour, the intensity of which is proportioned to the quantity of sugar. This is an excellent procedure, which Prof. Hardy prefers to all others, and which enables extremely minute traces of sugar to be detected. Another method consists in adding to the urine a small quantity of bismuth, potash, or carbonate of soda,

when a black colour indicates the presence of sugar. Barreswill's and Fehling's solutions of copper, from which sugar precipitates the copper, are not always at hand; and another procedure which has been recommended to country doctors is the employment of pieces of wool, which have previously been dipped in a solution of bichloride of tin. If one of these be placed in the urine while it is heated, a black colour is produced, which is due to the precipitation of the tin. But this is a defective procedure.

In order to be induced to examine the urine for sugar, our attention must have been drawn to some of the circumstances indicative of diabetes. This is, indeed, a disease which is often overlooked, so that the patient may suffer from it a long time before either he or his attendant suspects its existence. Still, there are indications which ought to arouse the attention of the intelligent practitioner, some of which have been wrongly called fundamental, the others only being met with from time to time. The fundamental characters are five in number, viz., glycosuria, polyuria, polydipsia, polyphagia, and autophagia. There is only one of these that can justly be called fundamental – glycosuria—as the others may be absent, or only so slightly marked as to escape observation. The presence of sugar in the urine is revealed by many indications. We may often recognize it by grayish patches on the clothing or linen, which are reduced to powder when scratched with the nail. In women the chemise, from prolonged contact with the urine, may become spotted and stiffened as if by drops of syrup. Another circumstance indicating the sugary savour of the urine, especially in the country, is the great number of flies or ants that will be attracted around the vessel containing it. As to polyuria, it must not be thought an easy matter to decide when a patient passes more than the normal quantity of urine, for it is very rare for him to complain of this, so that we may be led to the suspicion of diabetes only by his frequent retirement to pass urine. Polydipsia is a very important sign, concerning which patients often say nothing unless interrogated. We then learn that they are constantly thirsty, and especially at night. Persons who cannot go to bed without a bottle of water at their side are almost always diabetic. Although polyphagia exists to a very great extent in diabetics, it is not a fundamental sign, as some of them have an invincible repugnance for food. Persons who are called "great eaters" not infrequently become diabetic. Autophagia is shown by muscular debility, emaciation, and anæmia, which are observed in most diabetics. Indeed, whenever an individual manifests this condition without any cause discoverable in the condition of the organs, on examining his urine it will almost always be found to contain either sugar or albumen.

Besides these signs, there is another observed in the patient the subject of the lecture, of great diagnostic value, viz., genital impotence, which is one of the first signs of approaching diabetes; and whenever individuals are met with who, previously virile, become weak and impotent without coinciding disease, especially of the spinal marrow, diabetes will usually be found to be the cause. Then, again, valuable information is derivable from the mouth, for besides the insatiable thirst and dry mouth, some patients complain of a disagreeable taste, which is sometimes acrid, and at others faint or bitter or sugary; and it is this perverted taste which contributes to maintain the thirst. It must not, however, be thought that the taste of sugar, complained of by some diabetics, is a constant thing, for, on the contrary, it is that which is most rarely met with. The mouth also frequently exhibits an aphthous condition, while the edges and tip, and even the whole surface of the tongue, may present a red aspect, as if the aphthæ had been removed. The gums also are often softened, fungous, or bleeding; while in some the teeth become loose or fall out without being decayed, and in others become carious. The breath is frequently of a bad, acid smell, and the saliva on examination is acid instead of neutral. Another fact which is not much known, and which has sometimes led to the diagnosis, is the existence of intertrigo at the commissure of the lips. This intertrigo labialis is, not exclusively connected with diabetes, but when met with should always lead to an examination of the urine. With regard to the digestive organs, bulimia on the one hand, and a complete repugnance for food on the other, with dyspepsia, should lead us to suspect diabetes. The skin also presents

some valuable indications, most diabetics having it very dry, with an absence or singular diminution of transpiration. This is, however, only observed when the diabetes is advanced and there is a considerable quantity of sugar in the urine. This is not the case with furuncles, which may recur eight or ten times in the course of six months; and with these may be mentioned anthrax, affecting the nape and other of the upper parts of the body—which is very common in diabetes. There is also an eruption peculiar to these patients, a gangrenous ecthyma, which appears on the legs, and is characterized by more or less considerable pustules, which are surrounded by a gangrenous circle. The pustule breaks, and the eschar falls, leaving an ulceration. But a much more important occurrence is the diffused phlegmon which supervenes on the slightest cause in diabetes, and frequently proves fatal. Spontaneous gangrene, chiefly occurring on the upper limbs, has long been a sign by which the existence of diabetes has been indicated. There are other cutaneous affections, which are much less known, and which are yet of importance, as their presence alone has often led Prof. Hardy to the diagnosis of diabetes. Thus, in women, there may be pruritus of the genital organs, which is accompanied at first by a kind of redness around the meatus, the erythema gradually extending to the labia, the entire vulva, the groins, and often over the whole belly. "It has happened to me to diagnosticate diabetes pretty frequently in women by the existence of erythema in the supra-pubic fold. In such cases, whether the redness exist alone, or is accompanied by a slight transpiration, always examine the urine. It is an almost constant sign of diabetes. The knowledge of the fact is of interest, because it is a means which, although indirect, is certain of arriving at a diagnosis. It has been sought to explain this occurrence by the contact of the parts with the saccharine urine, but I have seen the affection occupy regions of the body which the urine never approached. I have seen this eruption, in fact, between the two breasts, in the armpits, behind the ears, and at the commissure of the lips. There is, then, some peculiar condition of the economy and of the blood characterized by this eruption, as also by the insupportable itching which accompanies it. These phenomena do not exist only in women, as analogous ones are observed in men. Thus we observe affections of the glans and prepuce, especially when this is somewhat long. Between these there is a purulent secretion, a peculiar balano posthitis, which induces extremely distressing itching. So also the glans may, although rarely, become the seat of a special phenomenon, a kind of grayish-white thick pseudo-membrane covering the whole or part of the glans. Frequently, also, we may observe an erythematous inflammation of the scrotum, and especially a pruritus analogous to, and in all respects comparable to, the vulvar pruritus."

As other signs of diabetes we have also affections of the eye. A variety of soft cataract is, in fact, proper to this affection. It is also often accompanied by amblyopia, due to changes in the optic papilla, deposits in the retina, etc. Lastly, in certain diabetics, intense neuralgic pains have been noticed, which are more persistent than those ordinarily observed. These pains especially manifest themselves in the calves, and in the articulations of the foot. They are prolonged sometimes for months; and if in cases of obstinate neuralgia the urine is examined, sugar will frequently be found to be present.

"Such are most of the principal signs," Prof. Hardy concludes, "which may reveal the presence of sugar in the urine. There are some among them which may seem to you at first insignificant; but still, they have a very great value if you know how to apply them. In these cases, the physician in face of his patient resembles the *juge d'instruction* in presence of the criminal: he seeks for indications on every side, and invokes the means to put him on the true path. Here the crime is diabetes, and the urine is the criminal. Search about, then, for indications in this direction, sometimes even for the slightest, adding one to another, and, especially if you take care to examine the urine, they will lead you to the diagnosis. Lastly, recollect this well—that of all diseases which are overlooked, diabetes is the most common, although its history has been written so long ago. There are cases, indeed, in which it may be unrecognized, where the disease conceals its symptoms; but it is in such cases that we find the sagacity of the physician brought into play, and that he ought to

know how to profit by the slightest indication in order to enable him to establish his diagnosis."—*Med. Times and Gaz.*, July 28, 1877.

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The Diagnosis of Diabetes Mellitus, more particularly in its early stages.

In Nos. 41 and 42 of the *Berliner Klinische Wochenschrift* for 1876, Dr. VEIT discusses the importance of an early recognition of diabetes mellitus. He remarks that its onset is rarely sudden, whilst the fully developed disease is seldom if ever curable. Attention must be paid to the nervous symptoms which often precede. The urine must be examined in all cases of doubtful neurosis. Given the presence of sugar, we must endeavour to find out if the case be one of temporary glycosuria or not. Temporary glycosuria, or melliturla, may suddenly attack previously healthy persons after severe mental excitement or shock; after poisoning with carbonic oxide; after traumatic lesions, such as falls or blows upon the head; after injuries to the brain, and alcoholic excesses, etc. It is also found in a variety of diseases, as in sciatica, apoplexy, in lunatics, and in phthisical patients. Quincke found sugar in the urine after poisoning with morphia; and, in cirrhosis of the liver, Levinstein found the same reaction after morphia-poisoning, but would not affirm it to be due to sugar. Traces of sugar have been found in the urine of pregnancy and lactation.

Dr. Veit thinks the alterations of temper and character, great irritability, sleeplessness, extreme feelings of fatigue, disorders of vision, itching of the skin, pruritus pudendorum, especially from the vulvæ, and more or less persistent headaches, are often prodromata of diabetes mellitus. He, therefore, looks for sugar in the urine in all cases of obscure neuroses, persistent headache, etc., especially in corpulent persons; and his research has led to the discovery of eight cases of diabetes during the last two or three years which were previously unsuspected. The following are examples. In November 1871, he removed a small cyst from the back of a bookseller, aged 40. The wound did not heal very well, and he thought it well to examine the urine. It contained 2.66 per cent. of sugar. The only symptom of which he complained was occipital headache. He did not mention this till interrogated. Twelve years before, he had fallen on his head, from horseback, and so fractured his leg, that it was removed just below the knee. Recovery was interrupted by pyæmia, but in the end was pretty complete. In 1872, the sugar all vanished; but, after two years more, 7.6 per cent. of sugar appeared in the urine. From this time, till May, 1876, the quantity decreased, so that it became only 0.7 per cent. Thirst was never a marked symptom, so that the case appears to have been one of the mild form of diabetes, of which Seegen speaks. In the next case, a very corpulent lady of Hebrew extraction, suffering from hysterical symptoms, for some time had examinations of the urine for sugar made, with negative results; but, in 1875, she had a boil on the face, and had severe headache, like occipital neuralgia. Examinations of the urine showed a specific gravity of 1025, and 1.20 per cent. of sugar, which soon rose to 1030 and 3.1 per cent. respectively. Just before her attack, she was greatly excited by the sudden madness of one brother, and the almost sudden death of another brother who was insane. She had most of the symptoms of diabetes, though polyuria was not constant. Quinine and bromide of potassium, with small quantities of the Carlsbad waters, proved beneficial to her. Another case, a married woman, aged 30, was melancholy all through gestation, had a dead child, and then became attacked with severe headaches, loss of sleep, slight œdema, and pruritus vulvæ, followed by sores on the tongue, dental caries, etc. The urine was found to have a specific gravity of 1038 and 4.56 per cent. of sugar (August 1874). A visit to Carlsbad and use of its waters restored her. The same waters, drunk elsewhere, did little or no good. Relapses occurred, and the same means proved useful; but in May, 1876, the urine still contained sugar, and she still had some symptoms of nervous disease, etc. Dr. Veit quotes other cases, and shows that the slight or mild forms are sometimes fatal at early periods. One such case, first noted with a carbuncle, died of apoplexy.

Most of these cases were treated with Carlsbad waters, and a partially restricted diet, with active exercise and much fresh air. Several other cases of boils, with sugar in the urine, are related in this paper.

[The reporter has had several cases under his care in which diabetes mellitus was unsuspected until the urine was examined. In three or four of these, the specific gravity has not exceeded 1025 to 1030. The colour of the urine was almost normal, but the sugar amounted to from 3 to 6 per cent., and the quantity of urine passed was from eight to ten quarts daily. He had one such case under observation for about twelve years. The sugar never exceeded 7 per per cent.; during most of the time it was about 4 or 5 per cent., and the specific gravity was for a long time about 1025, and the colour and appearance of the urine were almost those of health. This woman had cataracts in both eyes, and suffered severely from boils.]—*London Med. Record*, July 15, 1877.

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On the Treatment of Albuminuria.

In the treatment of albuminuria, caused by Bright's disease, accompanied by more or less marked œdema, M. G. See (*Union Médicale*, June 6) prescribes two or three litres of raw milk, from which the cream has not been removed, in the course of the twenty-four hours. This regimen he continues for months, and even for years. He likewise prescribes, according to circumstances, iodide of potassium, tartrate of potash, and iron or preparations of tannin. Many patients have been cured by this prolonged system of treatment.—*London Med. Record*, July 15, 1877.

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On the Pathological Anatomy of Leprosy.

The specimens of leprous tissues examined (*Dorpater Medicin. Zeitschrift*, Band vi., Heft 3 and 4) were obtained from the Pathological Institute and the surgical cliniques in Dorpat. As regards the history of the newly-formed elements, Dr. Dehio agrees with Virchow and Thomas, having found that in all stages of the disease the characteristic appearances consist of masses of small slightly granular cells. These cells are usually spherical or spindle-shaped, but some of them are angular with tapering projections. A nucleus and nucleolus are always evident. They closely resemble the cells known as white blood-corpuscles or lymph-cells, and agree with them in size.

The first development of the leprous degeneration takes place in a layer which is separated from the rete mucosum by a strip of healthy tissue. It sends processes upwards towards the epidermis, from which it is, however, always separated by a thin portion of intermediate healthy tissue, and downwards to the fat-lobules. In its development it is found in the lymph-spaces of the cutis, and immediately surrounding the finer and finest bloodvessels. Still following the vessels, it is found especially developed round the sweat-glands and hair-follicles, and finally in the fat-lobules, in which it completely takes the place of the normal structures. The sebaceous glands resist longer. In the macular form the fat-lobules are not affected, whilst in the tubercular form they are much infiltrated; but in both forms the nature of the cell-infiltration is the same. The growths from the sweat-ducts described by Friedländer were not found. In an affected eyelid, the growth was found to be arrested exactly at the part where the skin passes into the conjunctiva.

The leprous degeneration of the veins presented peculiarities which have a striking analogy with the changes found by Heubner in syphilitic arteries. The intima was thickened by an infiltration, with small cells towards its inner surface, the infiltration being limited by the elastic lamina. There was also a cellular infiltration of the muscular coat and of the adventitia. By the further progress of the disease, the lumen of the vein becomes filled with a hyaline, transparent, hard, and firm intercellular substance. The consequent occlusion of the veins affords an explanation of the cyanotic appearance and hypertrophic condition of the skin which are frequently found.

The changes in the nerves described by Carter and Virchow are confirmed.

The cells found in the lymph-spaces of the lymphatic glands had no specific characters.

In the liver the degeneration took place around the ramifications both of the hepatic and portal veins. The nodules were not found in the glandular parenchyma.—*London Med. Record*, July 15, 1877.

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A Case of Scleroderma Adultorum.

HALLER (*Berlin Klin. Wochenschrift*, April 2) describes a case of scleroderma in a girl aged 19. The catamenia had been irregular for a year, and had not been present for eight weeks, when the disease suddenly appeared on the neck, over the parotid region, and both lower jaws, the breast, shoulders, and arms. After about six months' treatment by strengthening diet, suitable medicines, baths, and the rubbing in of ointments over the affected parts, she began to improve. She soon afterwards quite recovered, with the exception of some hardness of the skin, which remained over the parotid gland and the border of the lower jaw.—*London Med. Record*, July 15, 1877.

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A Case of Cachectic Chloasma with Vitiligo.

Dr. A. THURMAN describes (*Annali Universali di Medicina e Chirurgia*, March, 1877) the case of a man, aged 59, the whole surface of whose body was characterized by excess or absence of pigment, the white patches running into each other and advancing into the darkly pigmented surface by convex borders. Large portions of the skin of the thorax, abdomen, lumbar region, and legs were completely colourless.

The disease had begun three years previously in both hands, then the forearms, then the arms and feet, legs and thighs, and lastly the abdomen and chest; the general health being good during this period. There was no other disease present, but the man had existed in circumstances of great misery. The author calls attention to the advanced age of the patient, the great extent of the disease, and the conditions of life under which it developed, and considers, on these grounds, that it is not to be considered as a case of simple vitiligo, but as deserving the name of cachectic chloasma.—*London Med. Record*, July 15, 1877.

Surgery.

On Wounds of the Brain from the Auditory Canal.

In a paper read at the fifth Congress of the German Society of Surgery, Prof. ROSER, of Marburg, communicated (Von Langenbeck's *Archiv für klinische Chirurg*, Bd. xv., Heft 3) the results of some investigations that had been made by him in order to determine the topographical relations of the auditory canal to the brain. The object of such investigations was to throw some light on those cases of injury to the head, in which, notwithstanding a discharge of cerebro-spinal fluid from the ear and an extrusion of small portions of brain-substance, no other serious symptoms result, and the patient makes a good recovery. The author reports four kinds of variation in the above-mentioned anatomical relations. The partition between the auditory canal and the cranial cavity may be unusually thin, or it may be much increased in thickness, being there composed of spongy bone. In some instances the tympanic cavity was found to be extended upwards and outwards over the roof of the meatus, and in others this roof contained air-cells in communication with the tympanum. The author's observations show that the roof of the auditory canal is in close

proximity with the middle cranial fossa and the inferior temporal convolution of the cerebrum, and that but little force is required to penetrate the skull in this region and to wound the meninges and the brain. It is shown also that the middle cranial fossa may be perforated and the middle cerebral lobe wounded through the ear. The author points out that the prognosis in cases of head injury, with aural discharge of cerebro-spinal fluid and extrusion of brain substance, is not so unfavourable as it is generally supposed to be, since these symptoms do not necessarily indicate extensive fracture of the petrous process and of the base of the cranium. This conclusion had been previously derived from clinical observation. Three cases of head injury had been observed by Professor Roser, in which there was a discharge of cerebro-spinal fluid from the ear, and one case in which there was extrusion through the meatus of cerebral substance, in all which cases recovery took place, contrary to expectation. In one of these cases it was found, on examination by means of the aural speculum, that the tympanic membrane remained intact, and that in the roof of the meatus there was a small penetrating slit. Two other cases of recovery from head injury after discharge of brain substance from the ear, are briefly recorded. The author alludes to the possibility of mistaking in such cases blood-clot for brain-matter, and he asserts at the same time that the objection sometimes made, that the matter extruded cannot be brain-tissue, when there is no discharge of cerebro-spinal fluid, does not hold good, since in some undoubted cases of injury to the brain this coexistence has failed. Professor Roser allows that the surgeon cannot expect to find a perforation of the same part of the skull-wall in every case of injury to the head with discharge of cerebro-spinal fluid and of brain-substance. There is, probably, it is admitted, a lesion of tympanic membrane in the majority of such cases. Variety in the nature and situation of the lesion is the more to be expected if it be considered that in the comparative study of many crania much difference will be found in the structure and thickness of the osseous parts usually involved. In most individuals the wall of the skull about the membrana tympani is very thick; in very few of two hundred crania examined by the author was the bone at this situation found to be translucent. It is thought that a discharge of cerebro-spinal fluid may be due, in some instances, to traumatic diastasis of the petro-squamosal suture. There may be, as is well known, an aural discharge when the lesion consists in but an inconsiderable fissure of bone with rupture of the meninges. The author thinks it possible that the discharge may exist independently of any direct lesion of bone, and that the cerebral meninges having been ruptured and the surface of the bone exposed, the cerebro-spinal fluid may transude into the auditory canal. As in osteo-myelitis of a long bone, the medullary fat may be forced into the caniculi, so, thinks Professor Roser, may cerebro-spinal fluid, through intracranial pressure, be driven through the pores of a cranial bone.—*British and Foreign Med.-Chir. Review*, July, 1877.

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On Congenital Serous Cysts in the Orbit.

Dr. J. Talko, in Zehender's *Monatsblätter* for April, publishes a case of microphthalmus with a serous cyst under the lower lid.

The author has observed five similar cases, and gives the following summary of his observations.

Congenital serous cysts of the orbit are usually accompanied with microphthalmus. Such cysts are always situated between the eye and the under—or under and lateral—wall of the orbit; they are commonly covered with conjunctiva, and increase in the direction of the lower lid, which they stretch so that the colour of the cyst is seen through it. Such cysts are usually filled with yellow serous fluid, rich in albumen. Their size is very variable; they cause ectropion of the lower lid, and prevent the development of the eye, which remains very small and deeply placed in the orbit. Such cysts are not formed after birth; but they do not originate in a common vesicle with the eye. They are not usually intimately united with either the conjunctival fold or the eyeball. Such cysts should be extirpated.—*London Med. Record*, July 15, 1877.

On the Healing of Wounds of the Cornea.

In a paper in Virchow's *Archiv*, Band lxix. (abstract in *Monatsblätter für Augenheilkunde*, March), is a paper by HANS VON WYSS, on the healing of corneal wounds. The results of his investigation are included in the following statements. 1. Non-penetrating wounds become filled up with epithelium which is proliferated from the epithelium at the edges of the wound. 2. Penetrating wounds are filled to two-thirds of their depth with epithelium. 3. The cellular elements of the true corneal substance take no part at first in the healing process. 4. Inflammation of the cornea does not follow a simple corneal wound; it is always the result of an accidental exciting cause, and delays the proper healing process.—*London Med. Record*, July 15, 1877.

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On Rupture of the Choroid.

Dr. TEILLAIS of Nantes reports three cases of rupture of the choroid (*Annales d'Oculistique*, January-February, 1877) observed by him immediately upon their occurrence.

They were the results of direct violence. In each the choroid alone suffered, the retina and the sclerotic remaining intact. The rupture was attended with hemorrhages from the torn membrane, hyalitis, and floating bodies in the vitreous chamber.

Vision was almost entirely lost for some time after the accidents, and its acuity was ultimately permanently impaired, probably from the effect of shock upon the retinal elements. The presence of a central scotoma was marked in each case, peripheral vision remaining nearly normal. When the inflammatory symptoms following the injury subsided, the acuity of vision improved considerably. With the ophthalmoscope the fundus showed the appearances usual in such cases, viz., distinct rents in the choroid in the neighbourhood of the optic disk, more or less curved in shape, allowing the glistening sclerotic to be seen.

With the binocular ophthalmoscope the vessels could be seen passing across the rents on a higher level, but the shadow said by Mauthner to be thrown on the sclerotic was not visible. The treatment consisted in the free use of Heurteloup's leech to the temple, and the exhibition of mercury and the iodide of potassium internally.—*London Med. Record*, July 15, 1877.

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On the Drainage Operation.

The March number of the *Monatsblätter für Augenheilkunde* contains a short notice by WECKER on his new drainage-operation for the treatment of detached retina. This consists in the insertion of a gold wire seton penetrating the sclerotic and choroid at the equator of the eyeball, or as near to it as possible, between the inferior and external recti. No results are given; nothing but a description of the operation itself. A reference is given, however, to a very important paper by the same author, published in Von Gräfe's *Archiv*, Band xxii., Abth. 4, on the operation as a means for the treatment of glaucoma, for which it was first devised by the author, with this modification—the gold wire seton is inserted in the corneal margin. Wecker proposes to perform his operation only in cases of absolute glaucoma in which there is atrophy of the iris, or where an iridectomy has already been done without reducing tension, and in cases of a hemorrhagic nature.—*London Med. Record*, July 15, 1877.

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On Ranula.

In a contribution (*Gazette Hebdomadaire*, No. 16, 1877) giving short clinical reports of six cases of ranula observed by himself, Prof. Michel, of Nancy, discusses the nature and situation and the surgical treatment of this form of new growth. In each of these cases excision of the cyst was practised with complete success. From observations made during these six operations, and

also from dissection of a ranula in a dead subject, the author has been convinced that, in the majority of instances of this affection, the cyst in its development has no connection with any of the salivary ducts. The view that ranula may be due to dilatation of the ducts of the sublingual or submaxillary glands is not altogether rejected; but it is held that, in the majority of cases, the cyst has some other seat of origin. In all the seven specimens examined by the author there was an absence of any connection between the cyst and the salivary canals, and in each case the tumour had evidently originated in the areolæ of the connective-tissue about the frenum of the tongue. The so-called capsule of Fleischmann, fluid distension of which is supposed by Tillaux and other French surgeons to constitute ranula, consists, according to Prof. Michel, in nothing more than an occasional and abnormal dilatation of one or more of the areolæ of the sublingual connective tissue. On microscopical examination of the contents of the cyst in the above-mentioned seven cases, tesselated epithelium and crystals of cholesterin were found in some, and globular epithelium in others. In no specimen was the author able to obtain a reaction resembling that produced by saliva. Prof. Michel holds that extirpation by the knife ought to be regarded as the general method of treatment for ranula; and he argues that this proceeding, first recommended by Heister, is free from many of the objections that have been raised against it by Sedillot. Far from being an impracticable operation in ordinary cases of ranula, it may, even in cases of severity and long duration, be readily and safely performed. Excision, though more difficult than the usual methods of surgical treatment, such as injection of iodine, batrachosioplasy, and incision and cauterization combined, is attended with speedy as well as with most permanent results. No relapse had occurred in any of the six cases treated by the author, five of which have been under his observation from time to time during many years. Two methods of extirpation are mentioned; in one, the ranula is first freely incised and the walls of the emptied cyst then dissected away; in the other, the cyst is removed intact, together with its contents. The choice between one and the other of these methods should be guided by the thickness of the cyst-walls. When this wall is thin, preliminary incision is to be preferred; when it is thick, extirpation without incision should be practised.—*Brit. and Foreign Med.-Chir. Review*, July, 1877.

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On Lipoma of the Tongue.

Tizzoni and Parona describe in the *Annali Universali di Medicina e di Chirurgia* for March, the case of Professor C. Gianni, aged 74, who had had a growth about a year, situated under the anterior and under surface of the tongue, on the right side. When he had had it six months it was of the size of a filbert, and, thinking it was a collection of pus, he punctured it himself, but let out only a little blood.

The tumour then rapidly grew, and attained the size of a large walnut, becoming very inconvenient, and causing constant spitting of saliva. Removal was effected by enucleation, and the nature of the growth was ascertained to be that of an ordinary soft lipoma. Microscopic examination confirmed the naked-eye opinion. The patient did well. A *resumé* is given of all the recorded cases of lipoma linguæ.—*London Med. Record*, July 15, 1877.

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A Case of Extraordinary Hypertrophy of the Lower Jaw in a Young Woman.

Dr. Vittadini describes, in the *Annali Universali di Med. e di Chir.* for March, 1877, the case of a woman who, in her twenty-first year, suffered from diffuse submaxillary lymphadenitis, which after prolonged treatment disappeared, but resulted in a slight swelling of the submaxillary soft parts, the effect of which was to give to the lower margin of the lower jaw a puffed-out appearance to the extent of a deformity. Two years later she married, and, after two more, was confined of a healthy child. She only lived six months more, at the end of which she suffered from chronic metroperitonitis, for which

she was admitted into the hospital of Castelnuovo Scrivia, where she died at the age of 26.

The lower jaw was removed after death, and found to be greatly thickened, especially in the body of the bone, though the form was retained. It weighed 9¼ ounces, or about double the normal. The various fossæ and foramina were obliterated, also the oblique lines; and the anterior surface projected to the level of the alveolar margin The teeth were good, regular, and fourteen in number; the third molars being absent. A section was made, and the interior found of ivory consistence throughout. The nature of the enlargement is thus considered a simple hypertrophy, all acquired during the five or six years in which the patient suffered from submaxillary inflammation.—*London Medical Record*, July 15, 1877.

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On a Deep Extensive Horizontal Wound of the Thyro hyoid Region, made in a suicidal effort.

In the *Commentario Clinico di Pisa*, Dr. G. Orsolini of Lucca relates, under the above title, a case which, in many large towns, may be regarded as of almost every-day occurrence, under the prosaic appellation of "cut throat."

The victim was a married woman, aged 48, who, in a fit of suicidal mania, employed a well-whetted scythe in an unsuccessful attempt upon her life. Her throat was cut horizontally between the hyoid bone and thyroid cartilage, exposing the back of the fauces, and dividing the epiglottis. She was brought to hospital a day after the injury, and placed in bed with the neck flexed. The wound was simply covered with a greased rag, sutures were avoided, and the position of the patient carefully watched by attendants. Whatever bleeding had occurred had now ceased. The power of swallowing returned on the fourth day. The wound closed after the expiration of ten or twelve days, and was healed in a few more. Eventually, deglutition and vocalization returned in perfection, and, after twenty-one days, the woman was sent to an asylum. She had previously been treated for syphilis in the same hospital, and at the time of the self-inflicted injury was found to have double lenticular cataract. The rest of the account, which occupies six pages, is a minutely detailed description of what the surgeon saw through the wound.

[This is a case which well exemplifies the natural progress of a complicated wound towards complete recovery under rational surgical supervision, but in the absence of surgical meddling. It supplies a good text for a clinical lecture, and here lies its interest, which, in other respects, is common-place.—*Rep.*]—*London Med. Record*, July 15, 1877.

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Medulloma of the Scapula; Extirpation; Recovery.

Victor F., aged nineteen, a mason, entered M. Péan's ward at the Hôpital St. Louis, Paris, on the 6th of April last. He was very robust and well proportioned. His family history was extremely satisfactory, and he himself had never had any serious affection, and had never had any venereal disease.

About five months before admission he began to feel slight diffuse pain in the left scapular region, extending down the corresponding arm. At this time there was no swelling to be seen, and consequently no deformity of the posterior part of the shoulder. It was only about a month before his entering the hospital that he detected a tumour in the infraspinous fossa of about the size of a mandarine orange. From that time the tumour increased rather rapidly in size, but the patient was still able to continue his work. Indeed, it was owing to the rapid development of the growth rather than to the pain it produced that he sought advice.

On admission it was easy to see that the infraspinous fossa was occupied by a large rounded swelling. The deformity was very pronounced. The growth was hard and seemed regular in shape, and its surface did not present any inequalities, but was, on the contrary, smooth to the touch. Its borders could, however, only be defined with difficulty, especially towards the axilla. The

skin which covered it was of normal appearance, with the exception of the presence of a few dilated veins which traversed the region. There were no adhesions. No sign of fluctuation or softening of the mass could be detected. The lymphatic glands of the axilla were not in the least affected.

If was thought that the tumour had originated in the bony tissue of the scapula, and that it had invaded the whole of the infraspinous fossa as far up as the spinous process. It was not so easy to determine the nature of the tumour. Amongst those growths of a fibroid consistency are enchondromata, fibromata, fibro-plaxomata, and medullomata. The elasticity of the tumour excluded the idea of an exostosis. Enchondromata have a much less rapid growth than the tumour in question, besides they are harder and frequently present patches which are considerably softer than the surrounding parts. Fibromata also present a much slower development; they are generally well defined and easily circumscribed; their surface is smooth. Finally, notwithstanding the rareness of myeloid tumours, M. Péan was brought, by exclusion, to think that this was one. However, as the tumour appeared to be making rapid progress he decided to operate upon it immediately.

On the 14th of April the patient was put under chloroform, and a curved incision was made, with the convex side looking downwards. The wound extended from the axillary to the spinal border of the scapula. The skin was then dissected up, but no signs of the tumour were yet to be seen, and consequently M. Péan was reluctantly obliged to incise the muscles which completely covered its superficial surface. Upon lifting up the inferior angle of the scapula and passing the finger underneath it, it was found that the anterior face of the bone was also occupied by the tumour. After having carefully dissected the inferior part of the scapula, a chain-saw was passed round the bone immediately under the spinous process, and everything below that limit was taken away. A portion of the wound was brought together by sutures, and drainage-tubes were placed in the dependent positions. Alcohol dressing.

On the fourth day after the operation the sutures were taken away, and bands with collodion were put in their place.

During the first week the patient had not the slightest bad symptom, and was going on very well. The temperature never rose above 38.6° C. The pulse varied between 90 and 105.

On the 26th of April the wound was nearly healed, and from that day the patient continued to make rapid progress; on the 13th May he was completely cured, and ordered to go for a fortnight to the Convalescent Hospital at Vincennes.

The tumour was examined by M. André, and pronounced to be of a myeloid nature.—*Lancet*, July 28, 1877.

On Fibro-Lipoma of the Spermatic Cord.

In an account of a case of this kind in the *Annali Universali di Med. e Chir.* for March 1877, Tizzoni and Parona begin by expressing their sense of the great difficulties attending the study of those tumours of which the testicle and spermatic cord are the seat.

Their case was that of a carpenter aged 45, with a constitution originally robust, but now impaired by drink and venereal disease. The tumour was in the right scrotum, about the size of a fist, of gradual growth, and of about two years' duration. It reached from the outer inguinal aperture to the bottom of the scrotum, and was continuous with the spermatic cord, which could only be distinguished above it. The testicle was healthy, as were other parts. A small collection of serous fluid was detected, by the feel and by transmitted light, in the lower end of the growth, all the rest of which was of a firm consistence. The tumour was cut out, and with it the testicle and adjacent part of the spermatic cord, which were inseparable from it. The cord was tied with an elastic ligature cut short, and the wound closed with twisted sutures. The wound was completely cicatrized in ten days; after which the patient caught cold, was attacked with tetanus, and died three days later, no examination being allowed. Microscopic examination of hardened sections, stained in carmine and logwood severally, showed ordinary adipose tissue with fibrous septa, and abundant vessels and nerves. According to the authors, the vessels were affected with

obliterative inflammation, being in some places completely occluded with proliferated epithelium. In the sheaths of the nerves also, they seem to have noticed a dilatation of the lymphatic spaces, together with a general thickening of the sheath and infiltration of the same with leucocytes.—*London Med. Record*, July 15, 1877.

On Injuries of the Subcutaneous Structures of the Lower Extremity.

The following conclusions are given at the end of a memoir of Prof. Verneuil (*Archives Gén. de Méd.*, Feb. 1877), on the severe forms of injury to subcutaneous soft structure of the leg (*coups de fouet*):—

"1. Under the influence of an extension movement of the foot made suddenly and unexpectedly, and with more or less violence, rupture may be produced of the subcutaneous soft parts of the posterior region of the leg. 2. These ruptures, which vary in extent and situation, within the limits of the region, do not always involve the same tissues. There is no doubt that tendon in some cases, muscular aponeurosis in some, and fleshy parts in others, and even two or all of these parts together, may be involved. In some cases, vessels and nerves are at the same time ruptured. 3. Notwithstanding the undoubted diversity of the anatomical seat and of the histological lesions, the mode of production and the immediate phenomena present a sufficiently close similarity to justify surgeons in confounding all the varieties, save in the case of complete rupture of the tendo Achillis, which has been described apart, and applying to these the common denomination of sprain (*coup de fouet*). This term, like many vulgar appellations, has its advantages and its inconveniences; it may be preserved for a time, but sooner or later pathological anatomy and precise diagnosis, based on anatomy, will cause it to be removed from surgical nomenclature. 4. The secondary phenomena, on the other hand, vary in a marked degree, according to a multiplicity of conditions, such as extent, situation, histological nature of the lesion, antecedent conditions of the part of the injured region, constitution of the patient, and character of the treatment. Hence the necessity for the recognition of forms that are distinct from the first, or that subsequently become distinct through the supervention of complications. 5. Of these conditions one of the most important, though least known, is, without doubt, the existence in the posterior region of the leg of deep-seated varices, and especially of intra-muscular venous dilatations. These conditions fully account for certain unfavourable symptoms which more or less retard recovery, such being large effusions of blood, circumscribed hæmatomata, considerable and persistent œdema, aggravation of persistent and previously disregarded phlebectasis. 6. This condition of varicosity accounts especially for the development of formidable symptoms, having as their starting-point and as the seat of their ulterior development the venous system. The names of these morbid phenomena will at once indicate their gravity—extensive thrombosis, simple or double phlegmasia, alba dolens, embolism, phlebitis, and pyæmia. The occurrence of these phenomena, which cannot readily be admitted as consequences of simple rupture of tendon or muscle and of injury of healthy tissues, can at once be explained when we know that a deep-seated varicose network of the leg has been involved in the primary lesion, and that through phlebectasis of the lower limbs the muscles are riddled by enormously dilated veins, with thin and tender walls. 7. It will probably be demonstrated, ere long, by pathological anatomy, that a certain form of sprain consists exclusively in rupture of an inter-muscular or intra-muscular venous dilatation. 8. The preceding conclusions, in showing the pathology of the morbid phenomena, may be taken to explain and justify the excessive but well-founded fears of surgeons of old. The prognosis is assisted, and we learn how good a part is played by antecedent pathological conditions in the course and termination of local lesions apparently of but little consequence. 9. Practical surgery may also profit through these conclusions. The surgeon, when called to treat an injury of the kind described, ought carefully to determine whether varices do or do not exist. In case of an affirmative, he should endeavour to prevent and to contend against thrombosis, or ought, as a rule, to abstain from any mechanical action that might excite irritation."—*British and For. Med.-Chir. Review*, July, 1877.

Midwifery and Gynæcology.

On Extra-Uterine Gestation.

In the *Aertzliches Intelligenz-Blatt*, No. 16, Dr. STICKL relates a case of extra-uterine gestation complicated with a normal uterine gestation. The patient married at twenty-two years of age, and had eight children born at term, and four prematurely. In March, 1874, the catamenia ceased, and during the succeeding months the patient, V. A., felt and showed all the signs of pregnancy. At the end of November, 1874, severe pains in the abdomen set in, together with bleeding from the genitals. In a few days these symptoms ceased and milk was secreted, which remained until the beginning of 1875. The size of the abdomen only slightly diminished. On February 2, 1875, the catamenia reappeared, and continued at regular intervals until the middle of December 1875, when they ceased. On the evening of May 31, 1876, severe labour-pains set in, and Dr. Stickl delivered her of a fœtus, and removed the placenta; at the same time, he could feel a tumour pressing the uterus from above. From this time the patient became thinner and weaker. The original tumour could be plainly felt in the umbilical region. On July 8, Dr. Stickl introduced under the umbilicus a small trocar, through which a small quantity of greenish-gray fluid escaped. On the 10th, he introduced a larger trocar, and drew off some more fluid. The trocar was withdrawn and replaced by a laminaria tent. Two days afterwards, the cyst was washed out with carbolic solution. On July 24, Dr. Stickl introduced his forefinger, and could feel the fœtus; he then enlarged the opening in the abdominal wall by incisions in different directions, and withdrew the fœtus piecemeal. The cyst was injected with carbolic solution, and the opening covered with carbolized tow. The cyst, under repeated injections gradually diminished, and by August 15 it had almost healed. V. A. has returned to her usual occupations, and has regained her usual health. — *London Med. Record*, July 15, 1877.

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Abdominal Section for Extra-uterine Fœtation.

Sarah A., aged twenty-seven years, was admitted into the Middlesex Hospital, under the care of Dr. HALL DAVIS and Mr. G. LAWSON, June 21, 1877, with circumscribed tumour in left iliac region, occupying also part of left lumbar and umbilical region, and extending from Poupart's ligament to a level with the umbilicus. The tumour was tense to the touch, tender, and presented on palpation a sense of fluctuation even as far as an inch to the right side of linea alba. No fœtal movements could be felt, nor could pulsations of fœtal heart nor uterine souffle be heard on auscultation, made on two consecutive days.

The os and cervix uteri were soft and patulous. Mammæ full, showing the veins well developed; areolæ dark brown; and on compressing the nipples, a yellowish milky fluid (colostrum) exuded. Tongue injected, papillæ large. Bowels confined, and scybala felt in rectum. Complained of much pain in left side, of throbbing character, in the site of the tumour, but the pain was not constant. Patient was rather emaciated; aspect anxious; legs not swollen; anorexia; thirst. Pulse 130; temperature 102.7°. No albumen in urine; heart- and breath-sounds normal.

Family history good. Patient had been healthy up to present illness. Catamenia appeared at sixteen, and continued up to Christmas last. Had been married eighteen months, but never pregnant before.

Present illness.—Catamenia came on December 24th last. A few hours after their appearance she was suddenly seized with severe pain in lower and left part of abdomen. Three weeks after this, patient noticed a small lump of the size of a hen's egg above left groin. This gradually increased, and was always tender. For the last month the increase has been more rapid. Two or three months ago she noticed her breasts had become somewhat enlarged. During nearly her whole illness, she says she has been losing blood more or less per

vaginam, and on several occasions has passed what she describes as small bits of flesh (blood-clots ?), and sometimes the blood has been mixed with "matter" (mucus ?). She has never felt fœtal movements. On 12th of June she had a severe rigour, and another on the 13th, and on the 14th a third. No regular morning sickness; has lost flesh during the last four or five months, and has had frequent epistaxis in the morning. Bowels mostly confined. Ordered enema of two ounces of olive oil to one pint of warm water to remove scybala.

June 22. Temperature 102.6°; pulse 120. Has not slept. Bowels acted under enema, but as rectum seems still distended with feces enema is to be repeated.

23*d*. Temperature 101 4°. Slept a little last night. Bowels have acted freely. Feels and looks better. Abdomen still tender. Linseed and opium plaster to be applied. An ounce citrate of potash draught to be taken every four hours.—10 P. M., temperature 104°, though at 2 P. M. it was 102.4°. Poultices have relieved abdominal pain. Tongue intensely injected, papillæ enlarged.

24*th*. Temperature 100°; pulse 124. Bowels open. Slept, but wandered in her sleep. Poultices to be continued, minus the opium, as pain is much less. Urine sp. gr. 1020, acid, no albumen. She takes eggs beaten up with milk, and custard pudding.—2 P. M., vaginal examination, under chloroform, revealed a patulous cervix, and through the relaxed os the finger passed into uterus, the cavity of which was a little enlarged, but quite empty. A quantity of mucus tinged with blood came away on the finger. Rectal examination reached the lower boundary of the enlargement on the left side. Dr. Hall Davis concluded that the case was one of extra-uterine gestation affecting the left appendages of the uterus.—5 P. M., at a consultation in the evening the diagnosis was concurred in, and the relief of the patient by operation on the gravid cyst was decided on for the following morning.—9 P. M., pulse 138; respiration 44; temperature 102.4°.

25*th*, 3 A. M. Temperature 102.8°.—9 A. M., pulse 130; respiration 40; temperature 101.4°. Patient has passed a restless night with considerable pain.

Operation by Mr. Lawson.—Chloroform having been given, an incision about three inches long was made over the most prominent part of the cyst, in a line parallel with, but external to, the course of the epigastric artery. Muscles, fascia, and peritoneum having been successively divided, the tumour was exposed. A large vein in the abdominal wall, which bled freely, was tied. The surface of the cyst presented a purplish tint and glistening appearance, and was traversed by large veins and venous sinuses. On passing the hand into the abdominal cavity the anterior half of the tumour was found free, but the posterior part was firmly adherent to the parts behind. After slightly enlarging the wound upwards and inwards, an incision was made through that portion of the cyst which was free from veins. The knife came at once upon the placenta. The hand was then passed between a portion of placenta and the cyst-wall, to which it was adherent. The placenta being pressed aside a foot presented itself, by which the fœtus was drawn out. The fœtus was dead, and the skin had desquamated from decomposition. On cutting through the amnion about three-quarters of a pint of dirty sanguineous amniotic fluid escaped. Care was taken to prevent any of this fluid passing into the peritoneal cavity. The umbilical cord was then tied in two places, and divided. The portion of placenta already separated was ligatured, excised, and removed, together with the umbilical cord to which it was attached, a sufficient length of ligature being left by which to remove, when the time should arrive, the remaining and adherent portion of placenta. On looking at the cyst-wall after removal of fœtus a portion of intestine was found adherent to it. The edges of the opening in the cyst-wall were now stitched to the sides of the opening in the abdominal parietes, including the peritoneum, by interrupted sutures. This was done to cut off all communication between the cavity of the cyst and the cavity of the peritoneum. As there was some oozing of venous blood from lower part of cyst, and the pulse was very weak, the cavity was washed out with solution of perchloride of iron (half ounce to pint), upon which the bleed-

ing ceased. The wound was dressed with a light pad of cotton wool saturated with carbolic acid lotion, 1 in 60. A flannel abdominal binder was adjusted, and a suppository of morphia (half a grain) administered per rectum.—2 P. M., pulse 135; respiration 36; temperature 101.7°. Has been dozing most of morning. Urine drawn off, 5 oz., with sp. gr. 1025; acid reaction; no albumen.—9 P. M., pulse 132; respiration 40; temperature 102.4°. Has had slight nausea, but no sickness. Pulse is much improved No hemorrhage from wound; no tenderness over abdomen, which is slightly tympanitic. Is in no pain.

26th, 1 A. M. Is sleeping quietly, and has been so for an hour.—8.30 A. M., respiration 42; temperature 99.6°. Has passed a comfortable night, sleeping most of the time; the urine was drawn off at 7 A. M., sp. gr. 1024, acid, and slightly albuminous; the vagina was washed out last evening and this morning with weak carbolic lotion, because of an offensive discharge; no change has taken place in the wound, no oozing from it; abdomen tympanitic; pulse almost imperceptible; respiration shallow; complains of feeling of suffocation; no pain.—10 A. M., is quite conscious; pulse as before; respiration quicker and more laboured; hands cold and clammy, but feet warm; is very restless; has taken beef-tea, milk with brandy in small quantities, and has sucked ice frequently, for which she much craved.—12.30 P. M. is gradually sinking; feet still warm, hands cold; is perfectly conscious, and knows her friends; death took place at 2 P. M.

Autopsy.—The breasts as above described, and on making a section of them, a quantity of colostrum escaped. The edges of the cyst were found softly adherent by lymph to those of the wound. The cyst measured seven inches in diameter, and was situated in the left iliac and part of hypogastric regions, the uterus being below and slightly anterior to it. The cavity of the cyst was lined along its anterior and upper surface with firmly adherent placenta; the remaining inner surface of the cyst was covered with blackened ragged shreds. The cavity contained in addition a large dark blood-clot. The uterus was vascular, and a little enlarged, its cavity larger than an unimpregnated uterus. No decidua was found; it had probably been thrown off in the discharges. The papillæ of the mucous membrane were enlarged. On removing the genito-urinary organs from the pelvis, the cyst was seen to occupy the position of the left ovary, no trace of which could be found. The left Fallopian tube could be traced up to and was lost upon the cyst-wall. The tube was much thickened and dilated towards its fimbriated end, and filled with thick secretion, some of which looked black. The right Fallopian tube was normal in size, and adherent to the right side of the cyst wall by its fimbriated end. The right ovary was in its normal position and apparently healthy. A part of the sigmoid flexure of the colon was firmly adherent to the back of the cyst, and a tag of the large omentum was also attached to the front of the cyst. Translucent granules of tuberculosis were scattered throughout both lungs, no portion being free, save a small portion of the left base, which was collapsed. Similar tubercles were found in the kidneys, but not in the liver, spleen, brain, or peritoneum. No trace of peritonitis could be found anywhere.

The points of interest in this case are—the diagnosis, the formation of the cyst, and the operation.

1. *Diagnosis*.—The cessation of catamenia, increasing size of abdomen, steady enlargement of breasts and their subcutaneous veins, with the darkened areolæ, and the formation within the breasts of a milky fluid, pointed strongly to pregnancy as the cause of the abdominal enlargement. On a particular examination of the site of this enlargement, it was found almost wholly on left side of mesial line. On vaginal examination the os uteri was found soft, like that of a pregnant uterus, but it readily admitted the point of the finger, and the uterine cavity was empty. The one-sidedness of the tumour, and the empty condition of uterus, indicated that the pregnancy was of the non-uterine variety. By rectal examination the cyst, believed to be the seat of extra-uterine gestation, could be reached high up towards the left side of the false pelvis.

2 *Formation of the cyst*.—The following is the joint report of Dr. Cayley

and Dr. Coupland's examination of the cyst: "We have examined the tumour and cannot find any trace of the left ovary, which appears to be completely amalgamated with the cyst. The fimbriated end of the Fallopian tube was also lost in the cyst, near which the walls of the tube were much thickened. In some places we found unstriped muscular fibre in considerable quantity in the cyst-wall."

3. *The operation.*—With reference to the operation there is little to add. The incision was made over the prominent part of the tumour through the abdominal muscles, and not in the linea alba; and, following the course previously adopted by Mr. Jessop, the part of the placenta which was not detached on the introduction of the hand into the cyst was left *in situ*. Had the operation been performed at an earlier period, the chance of success would have been greater. The condition of the patient, suffering, as was revealed by the post-mortem examination, from acute tuberculosis, rendered the operation but a forlorn hope.—*Lancet*, July 14, 1877.

A Case of Acute Complete Inversion of the Uterus.

Dr. J. C. Reeve, of Dayton, Ohio, records (*Am. Practitioner*, Aug. 1877) the following case of this extremely rare accident. Men of large experience may pass a lifetime without meeting with a case. Dr. Reeve not only never saw one before, but never heard of the occurrence of one. His preceptor, Dr. John Delamater, a professor of obstetrics for a great portion of his life, met with but one case in fifty-three years' practice.[1] Inversion of the uterus has been seen but once at the Rotunda Hospital since its foundation in 1745, during which time there have been more than 190,800 deliveries;[2] and compared with this, all individual experience is insignificant.

The following is his report of the case: I was recently sent for in haste by a physician, on account of supposed rupture of the uterus. On the way I learned from the messenger—the husband—that the woman had just been delivered of a child, her second confinement. That nothing unusual had occurred during the labour until after the birth of the head, when she had one very violent pain, so severe that it was difficult to hold her, and that something had then "given way inside;" that it was now difficult to "keep life in her;" she was constantly fainting away. I learned, upon further inquiry, that the placenta had been removed without difficulty.

From the fact of delivery by the natural powers I concluded that it could not be a case of rupture of the uterus, and from the symptoms detailed that it was undoubtedly a case of concealed hemorrhage.

Upon entering the room every appearance strengthened this view of the case. The patient's clothing and the bedding were saturated with blood; she was pulseless, with cold extremities, extreme pallor of face, purple lips, and every feature of impending dissolution; she felt that she was dying, and repeatedly said so. Placing my hand upon the abdomen, and feeling no trace of a uterus, it seemed that it must be a case of non-contraction and consequent hemorrhage; but this was speedily corrected, and the true nature of the case revealed, as my other hand entered the vagina and encountered there a round, smooth, hard body, entirely filling that cavity down to the perineum. By further passing my hand up to the fold, and by feeling through the abdominal parietes the indented cup-like portion, the diagnosis was fully established.

The condition of the patient did not admit of a moment's delay, and I immediately began reduction by pressure upon the fundus, with the fingers placed in cone-shape, for the organ was too large to be grasped and compressed. After a little time, I found that I had dimpled in the fundus, and felt that I should succeed. Fortunately the abdominal parietes were more than usually lax; and as reduction progressed, I found that material assistance was gained by using my left hand externally in rolling down the organ, or certainly

[1] See "Dr. Fisher's Trial," Cleveland Medical Gazette, vol. i., 1859.

[2] Playfair's System of Midwifery, page 396.

efficient counter-pressure was made in this way, and the process accelerated. By the time it was accomplished, however, my strength was pretty thoroughly expended. The hand was retained in the uterus, and pressure made externally with the other until contraction took place and the hand was expelled. Brandy had been hastily ordered for her, and administered as the operation was begun and progressed; her head had been lowered, and her arms held up by assistants at each side. These measures were continued, and we soon saw signs of rallying, first in the improved colour of the lips, and soon afterward the pulse could be distinguished, and this gradually increased in strength. A compress was placed over the uterus, a firm bandage applied, and her bed was made comfortable. She recovered without serious drawback.

The child was delivered about half past one in the afternoon, and I reached the case about fifteen minutes past five, so that the inversion must have lasted at least three and a half hours. She had some "bad spells" I learned very soon after the birth of the child, but the physician had left her and had been sent for as she became worse. As there was no force used in delivering the placenta, doubtless it was a case of spontaneous inversion occurring at the time of the violent uterine contraction which expelled the body of the child.

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Hemorrhage from the Vaginal Walls after Delivery.

In the *Progrès Médical*, for May 12, 1877, Dr. BUDIN records several cases of hemorrhage from the vaginal walls after delivery, and points out a sign by which such hemorrhage may be distinguished from that derived from other sources. In the first case, that of a primipara, in which the head presented in the first position, the head had scarcely made its exit, when a considerable quantity of bright blood was seen to flow down at both sides of the child's neck, the shoulders being not yet expelled. The flow of blood continued abundant after the birth of the child, and proved to come from a laceration of the right crus of the clitoris. It was arrested by repeated applications of cold water, followed by pressure for ten minutes. In a second case, also a primipara, with the fœtal head in the first position, a large patch of blood was noticed during the expulsion of the body, covering the right shoulder and trunk, and the breech on the same side, but no blood escaped at the sides of the child's neck. A few minutes after delivery blood began to flow from the vagina, and pressure upon the abdomen expelled a quantity of clots. The uterus, however, was firmly contracted; and the vagina being visually examined before a good light, it was found that there were enormous varices in the anterior vaginal wall, and that one rupture had taken place towards the right side and another towards the left. Ten minutes' pressure by a plug arrested the bleeding on the right side, but on the left some hemorrhage continued, and further pressure for fifteen minutes was required to stop it finally. In a third case, also a primipara, blood was observed covering the anterior shoulder, side, and breech of the fœtus, and the author was led to prophesy that the hemorrhage would be found to come from the vaginal wall. After a few minutes blood flowed in abundance, the vagina was filled with clots, a ruptured varix was found in the anterior vaginal wall, as in the preceding case, and was arrested by similar means. The author points out that hemorrhage from the vulva or vagina may be of serious or fatal consequence, and that it is therefore important, in reference to treatment, to distinguish it from uterine hemorrhage. He remarks that hemorrhage from the clitoris appears immediately after the release of the head, and before the expulsion of the shoulder. Hemorrhage from the cervix would not appear in any quantity till after the expulsion of the trunk, the vagina being distended until that time. But a large patch of blood over the shoulder, side, and breech, indicates hemorrhage from the anterior vaginal wall; and the author thinks that, taken in conjunction with firm contraction of the uterus, it will be found to be diagnostic of this condition.—*Obstetrical Journal of Great Britain*, July, 1877.

On the Treatment of Eclampsia.

Dr. CHARLES (*Memoirs of the Belgian Academy of Medicine*, 1876) sums up as follows the treatment of eclampsia, in his memoir on the convulsions of parturient women, which was crowned by the Belgian Academy of Medicine. 1. Mechanical eclampsia from the sixth to the ninth month: (*a*) bleeding, if the case be urgent, or if there be true or apparent plethora; (*b*) drastics, in all cases, which may be more or less replaced by diaphoresis; (*c*) chloroform when the fits are about to commence and during the clonic convulsions; (*d*) chloral in the intervals of the attacks as an injection to beneficially fill the place of narcotics; any antispasmodic, such as bromide of potassium, may be added to it; (*e*) to finish the delivery if possible; bring on labour, if the fits do not show signs of disappearing; to bring on forced delivery in very serious cases. 2. Reflex eclampsia before six months' gestation and after delivery; (*a*) bleeding is but very rarely indicated; (*b*) purgatives are always somewhat useful; (*c*) chloroform, chloral, etc., should be continued as in mechanical eclampsia; and antispasmodics should not be neglected. 3. Toxic eclampsia. Fulfil the symptomatic indications; general or local bleedings to combat congestion of the brain and spinal cord when it is very marked; cold applications to the head, purgatives, diaphoretics, baths, revulsives, narcotics, anæsthetics, etc.—*Lond. Med. Record*, July 15, 1877.

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Myxoma of the Placenta.

In the *Nordiskt Medicinskt Arkiv*, Band viii., Häft 4, Dr. STORCH describes three cases of partial myxoma of the placenta. In the first case there was a large tumour near the fœtal surface of the placenta; its diameter was five and a half inches, and it was situated immediately under the atrophied and distended chorion. A villous trunk radiated from the chorion throughout the mass of the tumour. The tumour was composed of a large number of nodosities of the size of a pea or smaller. Towards their peripheries the morbid villi took on a normal appearance, and dissolved into a filamentous tissue which, without any defined limits, was continuous with the healthy surrounding structure of the placenta. Nowhere did the tumour approach the uterine surface; serotina was normal. In the second case there was an oval tumour, 1.2 inches long, in the mass of the placenta, in communication with a villous trunk arising from the chorion. The said villous trunk ramified in a normal manner. In the third case, a similar tumour, nearly 10 inches in length, was present. The author remarks that these so-called myxomata should rather be regarded as cellular hyperplasias than myxomata, inasmuch as they result from a hyperplasia of the stroma of the central mucous and vascular tissue of the villi, combined with an excessive new formation of cells in the tissue.—*Lond. Med. Record*, July 15, 1877.

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Three Cases illustrating some of the various Results of Rotation of Ovarian Tumours.

Mr. J. KNOWSLEY THORNTON, Surgeon to the Samaritan Free Hospital for Women and Children, reports (*Med. Times and Gaz.*, July 28, 1877) the three following cases, which well illustrate the very different results of twisting of the pedicle of an ovarian tumour. Mr. Thornton first gives the following brief sketch of the three cases, and then endeavours, by comparing them, to bring forward some special points which may be of interest and value to us in the treatment of similar cases.

Case 1 has already been tolerably fully recorded in the twenty-seventh volume of the *Transactions of the Pathological Society*, so I will only briefly give its chief features here. The patient was twenty-eight years of age, pregnant four months and a half with her second child, the other being only fifteen months old. She was a bright, fresh-coloured, healthy little woman, but was suffering much inconvenience from the presence of an ovarian tumour along with the enlarged uterus. The cyst was in the right side, and freely movable; the uterus

lay to the left and behind it. She was placed under Mr. Wells' care at the Samaritan Hospital by Dr. Parsons, of Wimbledon, and I tapped the cyst and removed ten pints of ovarian fluid on October 19, 1875. She suffered from cyst-inflammation after the tapping, and on the 26th, when turning over on to her left side, was suddenly seized with violent pain in the abdomen. I was sent for, and found her in a state of collapse. She got through the night tolerably well with frequent opiates and free stimulation, but in the morning was so ill that, after consultation with Dr. Savage (Mr. Wells being out of town), I advised immediate ovariotomy, to which she eagerly assented, saying she felt she was dying. The operation could not be performed till the afternoon, and she was then so ill I thought she would have died in my arms as I lifted her on to the operation-table. On opening the abdomen, I found the enlarged uterus in its normal position, surrounded by intestines much distended with gas, and the cyst, in a gangrenous condition, lying behind and to the left of the uterus. The pedicle was three times twisted on its axis; this twisting and the position of the cyst quite shutting off its blood-supply. There were no adhesions, but there was some red mawkish-smelling serum in the peritoneum, and its surfaces were dark and congested—a low, diffuse, and non-adhesive peritonitis. The patient rallied after the operation, and was bright and cheerful, and able to talk to her husband; then again fell into a state of collapse, and died in sixteen hours. It is worthy of remark that, during the whole illness, cyst-inflammation and gangrene, ovariotomy and death, there was no sign of abortion, and the child was alive a few hours before the operation.

Case 2.—An unmarried girl of twenty-four was sent to the Samaritan by Mr. Stevens, of Hoddesdon, Herts, in December, 1876. She resembled the last patient in being fair, with full colour and appearance of robust health. Six months before admission she had suffered from severe pain in the right iliac region during menstruation. This had recurred at the three following monthly periods, but less severely after the second attack. Mr. Stevens sent her to Mr. Wells, who discovered a small, firm, movable tumour on the right side, but was doubtful as to its nature. She came under my care on December 18, in the absence of Mr. Wells, and I kept her under observation for a month. At this time the pain at the periods was less severe, and the tumour increased but little in size; but ascitic fluid gathered somewhat rapidly round it, and her general health was beginning to suffer. On January 24, 1877, I performed ovariotomy, and on opening the abdomen found a dark-brown somewhat flaccid tumour on the right side (having much the appearance of liver), surrounded by brownish serum, free in the peritoneum. Some slight filmy adhesions to the cæcum were ligatured and divided, and the cyst tapped, dark tar-like fluid blood escaping from it. The cyst-wall was soft and sodden, and broke under the claws of the trocar. A short pedicle was then seen on the right side, tightly twisted twice on its axis; it was untwisted by turning the tumour round and round from behind forwards; it was transfixed, and ligatured in two halves, though it was so bloodless that I think it might have been simply cut and left without fear of hemorrhage. The left ovary was represented by a small group of pedicellated cysts, like a bunch of grapes; it was also removed after its pedicle had been transfixed and tied. The patient made a rapid recovery, the highest temperature recorded after the operation being 99.6° Fahr. The tumour proved on examination to be a multilocular one, all the cavities containing dark thick fluid blood, and the structure of their walls so destroyed by infiltration of blood that nothing but broken-up fibrous tissue, blood-corpuscles, and granular *débris* could be found under the microscope.

Case 3.—An unmarried girl of nineteen was brought to me by Dr. De Lacy Lacy. She was a delicate, sallow-looking girl. On examination I found the abdomen large and distended, most markedly below the umbilicus, presenting on inspection the typical appearance of an ovarian tumour. No cyst-movement could be detected on deep inspiration, and dulness was continuous on the right side from the liver to the pubes, and was only interrupted on the left by what appeared to be the stomach and some inherent intestine. Both flanks were resonant. The uterus was anteflexed, and pressed down by the tumour, and closely connected with it. My diagnosis was ovarian tumour closely adherent

to the parietes and closely connected with the uterus, there being no evidence as to the side from which it sprang. Mr. Spencer Wells kindly saw the patient with me, and agreed with my diagnosis. This patient had been tapped a year before I saw her, and twelve pints of greenish-yellow fluid had been removed. She recovered well after the tapping, and from first to last had never suffered any pain in the abdomen. I would call attention, especially, to complete absence of pain as of great interest when we consider the condition found at the operation. I performed ovariotomy on March 21, 1877, at the Samaritan Hospital, and was fully prepared for a difficult operation; but it exceeded all expectation. It was impossible to find any separation between the tumour and the parietes, even after my original incision of four inches had been prolonged to eight; and a large patch of parietal peritoneum was unavoidably removed on the left side before I could find any point at which to commence separating it from the tumour. I then found the cyst firmly adherent to everything it touched—parietes, omentum, mesentery, intestines, stomach, spleen, and liver. Both ovaries were involved in the tumour, and united behind the anteflexed uterus. The cyst-contents were pus and large masses of yellow lymph, which also lined all the cyst-cavities with a thick layer. The adhesions were everywhere firm and fibrous, evidently not recent. I at last freed the tumour below, after ligaturing and dividing two thick, twisted pedicles, which proved to contain the Fallopian tubes, etc. I was obliged eventually to leave portions of the cyst adherent to the spleen and liver, and both organs were somewhat peeled of their capsules. The patient seemed likely to do well for thirty-six hours, and passed a fair quantity of clear urine of good colour; then suddenly the kidneys ceased to act, and she died comatose at the end of another thirty-six hours, during which only about an ounce of urine was secreted, in spite of constant endeavours to restore the action of the kidneys. When the tumour was examined after removal it was seen to be a large, single, rather thick-walled cyst, lined throughout by a thick layer of yellow lymph, which was also hanging into the interior in ragged membranous masses. When this material, which adhered very firmly, had been scraped off, the wall was seen covered with a dark-red granulation material, and softened and friable, evidently in an actively inflamed state. Both ovaries were firmly attached to the posterior and under surface of the cyst, its peritoneal surface and theirs thick and opaque, and so smoothly continuous it was impossible to say to which ovary the tumour really belonged. The right ovary was smaller than normal, and very intimately blended with the base of the tumor, the left being plump and round, rather larger than usual, and containing healthy Graafian follicles. Both the pedicles were tightly twisted two times and a half on their axes, and in the same direction. Between the left ovary and the twisted pedicle, a small, clear broad ligament cyst about the size of a small marble was growing. No trace of the fimbriated extremity of either Fallopian tube could be found, but both pedicles were much thicker (nearly an inch in diameter) at their ovarian, and tapered towards the uterine attachments, forming, in fact, dense twisted cones of fibrous tissue, with the open ends of the tubes and vessels still to be seen when they were cut across. The compound mass which I have attempted to describe might have been either a multiple cyst of the right ovary in which the septa had disappeared; a unilocular cyst of that ovary; or an extra-ovarian cyst. I should have been inclined to adopt the latter view as most probable had the uterus not been entirely free from the tumour, except in so far as it was attached by the uterine ends of the pedicles. Had the cyst been a broad ligament, one pushing up between its layers, and thus becoming attached to both ovaries, the surface of uterus also attached must have been very extensive, and no twisting of the two pedicles would have been possible. I think the true explanation probably lies in considering the cyst as springing from the right ovary inflamed after tapping, and then adhering to the left ovary—the rotation occurring after the cyst had thus acquired its two pedicles,—a subacute inflammation, started by the tapping and increased by the rotation, continuing as the cyst gradually filled and distended the abdomen, and causing adhesion to each organ it came in contact with.

In the three cases the twisting of the pedicle led to very different results, not

only before the operation, but during its performance and afterwards. I think we may trace the chief difference to the fact that two of the cases had been tapped. In them the effects of the twisting of the pedicle were very serious, though with well-marked differences.

In Case 1 tapping undoubtedly caused inflammation in the cyst; with the presence of more blood with imperfect circulation, fluid was rapidly secreted again, and the cyst became heavy, but before it was large enough to steady itself by its size, twisting commenced. This, of course, increased the inflammatory action and the weight of the cyst by hindering the flow of the venous blood. Then, before it was large enough to steady itself by contact with the parietes and surrounding organs, a sudden turn of the patient caused it to fall over and behind the pregnant uterus, and inflammatory congestion passed into gangrene. Twenty hours later the removal of the tumor and the fluid in the peritoneum which its presence had caused was already too late to save, though it undoubtedly prolonged life, and gave the patient a few precious hours of comfort, consciousness, and hope. Tapping in this case was clearly the cause of death; and I think, when we compare it with Case 2, the question at once suggests itself—Was there not something added to the simple inflammation? I will try and answer this question after considering the other cases.

In Case 2 I believe the cyst was as dead as in Case 1, and it was full of tar-like blood, and yet it remained for weeks inert in the abdomen, and only slowly, as its more fluid portion found its way into the peritoneum (which seemed incapable of absorbing it), did it affect the patient's health. It did not in itself possess sufficiently irritating properties to cause peritonitis and adhesions of neighbouring organs, and yet it must have been intensely inflamed before it became a multilocular blood-cyst, with sodden fibrous walls infiltrated with disintegrating blood. In Case 3, so far as we can read it, the sequence of events appears to be tapping, some inflammatory action, adhesion of cyst to other ovary, twisting of the mass with its two pedicles, and a prolonged and tolerably severe inflammation, causing adhesion to all neighbouring organs; the remarkable feature being that all this took place gradually and painlessly.

In Case 2, with the acute attacks of pain from which the patient suffered, one might have expected much adhesion, and there was none. How are we to account for these differences? I think it appears as if the more rapid and entire cutting off of the blood-supply, the acute process, with complete death of the tissues, is the least dangerous, provided there has been no tapping to complicate matters. In the more chronic process the whole substance of the cyst is inflamed, and still alive, and it attaches itself to all neighbouring parts by which it may maintain its life.

I cannot but think that in Case 2 the operation was happily performed when it was; for a mass of tissue such as I have described could hardly have ultimately been disposed of by nature unaided.[1] In the other two, I think, tapping must be credited with rendering two cases favourable for ovariotomy so unfavourable that the latter operation, when performed, could only be said to have failed to avert speedy death.

We may evidently have twisting of pedicle, either with or without tapping; but if the latter, it is a far more serious complication, and I think we must look to some septic mischief admitted from without to explain the difference.

No satisfactory explanation of the cause of rotation in these cases has been found, but I think it is possible that the peristaltic action of the intestines may start the process. A cyst flaccid after tapping and free from adhesions might be gradually turned over by the movements of the intestines; and so might a small tumour with a fair length of pedicle. The twist once started, the pulsations in the twisted cord would tend to increase it. This explanation would, I think, explain the most recent contribution to this subject. I refer to the case published by Dr. Malins, of Birmingham, in the *Lancet*, April 14, 1877. If

[1] There are undoubtedly cases on record in which a shrivelled fibrous mass, the remains of an ovarian tumour with twisted pedicle, has been found after death; but I think these must have been smaller tumours, and destroyed by the more gradual process with adhesions.

the case is complicated by pregnancy, the fœtal movements may also play an important part.

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On the Management of the Pedicle after Ovariotomy.

In a series of papers published in the *Deutsche Medicinische Wochenscrift*, Nos. 10, 11, 12, and 13, 1877, Dr. STILLING, of Cassel, suggests an explanation of the fact, first pointed out by Rogers of America, that, after application of a ligature to the pedicle of a cyst in ovariotomy, the ligatured portion does not mortify, and that the free end of the divided pedicle, when placed in the pelvic cavity, causes no irritation of adjacent viscera, and excites no constitutional reaction. Waldeyer, Spiegelberg, and others, have endeavoured to throw some light on this matter through experimentation on living animals, and examination of the bodies of these after death. The results of such investigations, however, have varied much, and have been far from satisfactory. The views and statements given in Dr. Stilling's paper are regarded by the author as but a fragmentary and preliminary portion of the work necessary for a full explanation of the natural processes that are carried on in the ovarian pedicle after deligation. It is stated here that a ligature, when applied with ordinary force to the pedicle, forms a deep annular groove, in which it is imbedded and almost wholly concealed. The small isthmus of pedunculer structure inclosed within the ligature is bounded on its proximal and distal side by a swollen and rounded mass of free pedicle. These two rounded portions are closely applied at their free surfaces so as to conceal the ligature. In the course of the first two or three days after the operation, adhesions are formed over the ligature between the applied distal and proximal ends of the pedicle at the seat of deligation; and in these adhesions, which subsequently increase in extent and become firmer, vessels are formed, and a circulation of blood and lymph established. In consequence chiefly of this circulation, the free extremity of the pedicle preserves its vitality, and is maintained in organic connection with that portion on the proximal side of the ligature. The author holds also that, in the small portion of pedicle that is constricted by the ligature, circulation of blood and lymph is re-established in the course of the first week after the ovariotomy. The thicker and firmer the portion of deligated pedicle, the less readily, he states, will it yield to the constriction of the ligature. At first, circulation through this included portion is completely arrested, but in a very short time the constricted tissue softens, and often, especially when it is composed of catgut, the ligature also softens and gives way. Then, by the force of the general circulation, blood is driven through the softened tissue into the most distal portion of the pedicle. The currents at first are small, but the supply of blood in this direction, together with that through the adhesions without the ligature, is sufficient to prevent death of the extremity of the pedicle.

Dr. Stilling argues that the extraperitoneal method of ovariotomy, viz., that in which the pedicle is compressed by a clamp applied without the wound in the abdominal wall, ought to be regarded as obsolete, and that the intraperitoneal method, in which the deligated pedicle is allowed to fall back into the pelvic cavity, is to be preferred, as being free from all the dangers and disadvantages to which the former proceeding is liable. With the extraperitoneal method much damage, and even tetanus, may be produced when the pedicle is short, in consequence of traction on and twisting of the uterus. Constant tension of the pedicle must interfere, it is held, with the natural process by which the constricted and gangrenous portion is separated from the living portion between the clamp and the uterus. The reproduction of this portion of the pedicle, and its retraction into the pelvic cavity, may take place prematurely and result in internal hemorrhage. The extraperitoneal method is not free from danger, even in cases where the pedicle is long. During the early stages of the after-treatment, and so long as the clamp is retained, there is a constant risk of hemorrhage, and the surgeon cannot be free from anxiety before the removal of the clamp, and complete healing of the wound in the abdominal wall

The following precautions, Dr. Stilling states, ought to be observed in order

to secure for the intraperitoneal method of ovariotomy the full amount of success that may be expected from it. All stages of the operation must be performed with strict attention to the many details of Lister's antiseptic method. When it has been found impossible to prevent the effusion of cyst-contents or of blood into the abdomen, this cavity must be carefully cleansed with sponges disinfected by a solution of carbolic acid. The most suitable material to be used for deligation of the pedicle is thick carbolized catgut. Dr. Stilling points out the importance of care in the deligation of the pedicle, and insists on the propriety of applying several ligatures, a thin cylindrical mass of peduncular structure being inclosed in each. Permanent occlusion of every vessel is thus insured, and recurrent and secondary hemorrhage prevented. It is laid down as a rule that each ligature should not include more than about six-tenths of an inch of the thickness of the pedicle. In order to insure a safe and effectual deligation of a tolerably thick ovarian pedicle, it is necessary, Dr. Stilling asserts, to apply at least six catgut ligatures. Care should be taken to guard against the loosening of the knot that is likely to take place when catgut is used. It is recommended that three knots be tied in each ligature, and that in the tying of each knot the ends of the ligature be stretched by prolonged and forcible traction. It is necessary to apply each ligature with such firmness, that the swollen portions of peduncular structure immediately above and below the groove in which the catgut is imbedded may fall together in close contact. In transfixing the pedicle, care must be taken to avoid a puncture of any large vessel. The pulsation of the large arterial trunks can be readily felt by the finger. If a vein be punctured, the consequent bleeding will not cease until after the separation of the ovarian cyst. The division of the pedicle should be made as close as possible to the seat of deligation, and care must be taken to avoid retaining any portion of the cyst-wall. The free extremity of the peduncular stump should be carefully washed with a solution of carbolic acid, before it is returned into the peritoneal cavity.

Dr. Stilling recommends carbolized catgut as the best material for the sutures used in closing the abdominal wound. By the use of this material the desired object may be surely attained, and the surgeon, after the incision has been closed, and antiseptic dressing applied, will find but little, if any, necessity to trouble himself about the wound. Each suture, which should consist of thick catgut, is furnished, in Dr. Stilling's practice, with a needle at each end, so that the abdominal wall may on both sides be punctured from within outwards. Each puncture is made about four-fifths of an inch from the edge of the incision in the abdominal walls, all the coats of which, peritoneum included, are traversed by the needle and suture. The knot is tied with some force, in order that the catgut may be deeply imbedded in the soft structures which it constricts. The sutures should be applied as closely as possible, so that the raw edges along the whole length of the abdominal canal may be brought into intimate contact. In favourable cases of ovariotomy, performed in accordance with the above-mentioned directions, and under strict antiseptic conditions, the abdominal wound will be found completely healed at the end of fifteen days or three weeks, no renewal of the dressing applied immediately after the operation being required during this interval.—*London Med. Record*, June 1, 1877.

On the Treatment of Vesico-Vaginal Fistula.

Boulay (*Thèse de Paris*, 1876), following the advice of Verneuil, employs the galvanic cautery, in place of the bistoury, to refresh the surfaces of the fistulous opening. He relates sixteen operations with very exact details, and mentions that Luigi (*Il Movimento Medico-Chirurgico*) has also employed these means with great success. The advantages which he claims for this method are, the absence of bleeding, and the great facility it affords for placing the ligatures; he alleges, also, the diminution of the risk of purulent infection, erysipelas, and peritonitis. He adduces statistics in support of his assertion of the harmlessness of the method. The only inconvenience is the multiplicity of the operative sittings; but this is, he considers, compensated by the rapidity and their facility.—*London Med. Record*, July 15, 1877.

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Anatomy and Physiology.

On Cerebral Localizations.

Dr. W. H. BROADBENT, Physician to St. Mary's Hospital, London, in a paper which he read at the recent International Medical Congress held at Geneva, presented the following conclusions :—

A.—*Motor Zone of the Superficial Cerebral Substance.*

1. The varied experiments of Hitzig, Ferrier, and other physiologists, have established the existence of a certain tract on the surface of the cerebral hemispheres which is in intimate relation with the nuclei of the motor nerves of the bulb and spinal marrow. In man and in the monkey, this zone is situated near the fissure of Rolando, chiefly in the two marginal convolutions which bound it. Here we find tracts more or less circumscribed, and specially connected with the leg, arm, face, etc.

2. The pathological phenomena of this zone coincide, in a remarkable manner, with the results of experimental physiology. Partial irritations may produce partial epilepsy, with or without hemiplegia, which is either fugitive or permanent. Deeper lesions attended by more or less complete destruction of the gray cortical substance may give rise to monoplegia or hemiplegia.

3. Admitting, however, the existence of a motor tract and motor centres on the surface of the brain, it is necessary to observe that no direct communication can exist between the cellules of this region and the cellules of the anterior gray cornua of the spinal marrow. The co-ordination and succession of movements produced by electricity; the kind of paralysis, its intermittence and short duration; the tendency of partial symptomatic epilepsy to commence in the hand, although different cerebral points may be affected; the lapse of time which occurs in the transmission of an electric stimulus; all these are reasons in favour of admitting that a ganglion must intervene between the cerebral surface and the roots of the motor nerves. From the cortico-motor centres descend our voluntary impulses; they are the source of ideo-motor actions. The cellules of the motor tract, which resemble those of the anterior cornua of the spinal marrow, constitute the apparatus whereby the dictates of our intelligence are formulated for expression or transmission to the world outside. The best example of a central cortico-motor function is that presented by the centre which presides over speech. It is the most important of all the cerebral localizations. Aphasia unaccompanied by paralysis of the lips and tongue is an example of what has been called a functional substitution, although the latter is incomplete.

4. The experiments of Ferrier and Hitzig tend to show the existence of a perceptive zone in the cortical layer of the brain. This zone extends from the curved fold which is the perceptive centre of vision along the sub sylvian convolution of the temporo-sphenoidal lobe up to the termination of the latter. It then turns round near the unciform fold, towards the occipital lobe, where it probably constitutes the gyrus calcarinus. Pathology has not yet enabled us to clear up this point. We know, however, that complete destruction of the occipital lobe does not affect sensibility.

5. The frontal and occipital convolutions, those of the insula, of the inner surface of the hemispheres, and of the supra-orbital lobule remain insensible to

electric stimulation. Lesions of these portions of the cortical substance are not usually followed by any effect. Destruction of the two frontal lobes appears to diminish intellectual activity, while destruction of the occipital extremities of the hemispheres seems to annul the appetite; but such effects are not calculated to throw anything like a satisfactory light on the functions of these lobes.

6. The brain does not appear to possess any special vaso-motor centre. The vaso-motor apparatus is connected with the general vaso-motor system, and, like the latter, has centres in the spinal marrow, in the central ganglia, and in the convolutions. In like manner we have to note the absence of special trophical nerves or centres. The nutritive influence is a property common to the whole nervous system.

B.—*The Corpora Striata.*

1. The function of the corpus striatum is undoubtedly motor. The greater portion of the fibres proceeding from the extremity of the cerebral peduncle terminate in the striated body. Electrical excitement of this part gives rise to contraction of all the muscles on the opposite side. Hemiplegia ensues whenever it is destroyed by experiment or by disease. The corpus striatum would appear to act as an intermediate organ between the hemisphere and spinal marrow. Its cellules, grouped together and combined by sensori-motor practice, constitute an apparatus for the transmission of impulses from these cellules to the muscles.

2. The corpus striatum may be regarded as an intermediate ganglion, serving for the transmission of sensitive impressions from the nuclei of the sensitive nerves to the perceptive centres at the surface of the brain. This theory may give rise to several objections, but it is supported by the results of experiment and of pathological anatomy. Admitting as correct our theory concerning the localization of the nervous centres, it is anatomically impossible to discover any other mode of connection between the hemispheres than that afforded by the thalamus. The phenomena of hemianæsthesia are explained by this hypothesis in a very satisfactory manner. The corpus striatum, in this point of view, has a double action, and may serve at one and the same time as an instrument of the hemisphere, and as an automatic apparatus.

A general interpretation of symptoms derived from this theory may be arranged under the following heads:—

(*a*) Paralysis is a rupture of fibres or cellules presiding over the mechanism of the nervo-motor apparatus.

(*b*) Anæsthesia is a rupture of sensitive mechanism.

(*c*) Tremor is the effect of some impediment to the conducting power of the white fibres.

(*d*) Convulsions (including chorea) result from irritation of the gray substance.

(*e*) Premature and transient contracture is connected with pressure on a ganglion.

Under the point of view now stated, the nervous system is a vast mechanism composed of cellules and fibres; hence its functional action should be capable of being described in terms of "cellules and fibres." We would thus be enabled to avoid the ambiguities which have hitherto impeded the knowledge of cerebral physiology, and might hope to arrive at a correct theory of cerebral localizations.—*Medical Examiner*, July 26, 1877.

On the Accumulation of White Blood-Corpuscles in the Cortical Portion of the Brain.

The Duke Charles of Bavaria, M.D., contributes an article on this subject to Virchow's *Archiv*, vol. lxix.

Popoff observed that in typhoid fever and in typhus there may be found in the brain white blood-corpuscles, not only in the neighbourhood of ganglion-cells, but even in their substance, in which case they might cause a division of the nuclei of those cells. These facts might be considered an anatomical base

for the brain-symptoms in those diseases, in case they should be confirmed. The duke examined about fifty brains to contest Popoff's observations. Among this number there were two from healthy persons, beheaded on account of being convicts; twenty-two were from persons deceased in all stages of typhoid fever, and others were from persons who died by pneumonia, meningitis, nephritis, general fatty degeneration, etc.

The result of his examination was, that in the cortical portion of every brain there are found numerous white blood-corpuscles. In general, they may accumulate on account of a retarded circulation, combined with an increase of the quantity of water in the brain.

Among the localities where the corpuscles are deposited, the author noticed the ganglion-cells, around which one, three, and sometimes even six or eight were placed. But they never penetrate the substance of those cells, and, of course, do not cause a division of their nuclei. Besides, there were found corpuscles in the perivascular spaces of His, in Robin's adventitial canals, and in the perignanglionic spaces. The latter are considered by the author as lymph-spaces, connected next with His's spaces. The brain-symptoms do not depend upon the presence or enlarged number of the white blood-corpuscles, nor upon the retarded circulation, nor, lastly, upon the increased quantity of water in the brain (provided this comes on slowly), but must be considered as the expression of a sudden increase of these three agents. Of course, the fever and its causes must likewise be taken in consideration in that respect.—*London Med. Record*, August 15, 1877.

Materia Medica and Therapeutics.

The Alkaloids of Ergot.

M. TANRET, of Troyes, has communicated to the Académie de Médecine some researches of importance on the active principle of ergot, which, two years ago, he described as "ergotinin." It has been suggested that this is merely the ergotin which Wenzell discovered in 1865. Two alkaloids were then described, ecbolin and ergotin; but the identity of these has since been admitted. The points of difference between this substance and Tanret's ergotinin are thus summarized. Ergotin is an amorphous substance, blackish-brown in colour, soluble in water, and insoluble in ether and chloroform. Ergotinin, on the other hand, is crystalline, white, insoluble in water, but soluble in ether and alcohol. There is, indeed, considerable doubt whether the amorphous ergotin is really an alkaloid, or even a simple substance, and whether it differs from the extract prepared and called by the same name by Wiggers and Bonjean. A magnificent red colouring matter, sclerethyrin, has been obtained from ergot, and it has been thought to be the same substance as ergotinin, but the spectra of the two are distinctive. M. Tanret has not yet determined the best means of extracting the ergotinin, but he has obtained enough to give us some information of its chemical and therapeutic properties. It is an extremely oxidizable body, and undergoes a peculiar transformation under the influence of light, becoming rapidly dark and resinous. The ethereal and alcoholic solutions are highly fluorescent. It would seem to have some chemical affinities with narcotin. It is a feeble base, combining with acids with difficulty, and forming crystallizable salts. The sulphate of ergotinin has, however, not yet been obtained. Its most characteristic chemical reaction is that, when a little ether has been added to it, sulphuric acid diluted with one-seventh of water causes a reddish-violet tint changing to blue. Ergot, it is calculated, contains only one part of this substance in one thousand. It has been found that its action on uterine hemorrhages is the same as that of ergot; the quantity needed being very small—not more than two to four kilogrammes in the twenty-four hours.

Other physiological observations on the action of this substance seem not to have been made, and it is singular that after two years M. Tanret is not able to publish a process for its extraction. But we may point out that, if his conclusions are corroborated by further observation, it is possible that we have in it the only active principle of ergot, for the dose of ergotinin asserted to be necessary to produce its effects on the uterus is proportioned to that of ergot. Taking the proportion of the alkaloid at one part in a thousand, two to four milligrammes are equivalent to a daily dose of thirty to sixty grains of ergot—about the quantity commonly given.—*Lancet*, September 1, 1877.

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Excretion of Mercury.

Dr. E. W. HAMBURGER gives an account in the *Prager Med. Wochenschrift* (No. 4, 1877) of some experiments he has made on patients who were employing mercurial suppositories, in regard to the elimination of the mercury from the system. In seven out of eight cases he discovered the metal in both the urine and the milk. It was always discovered in the urine, but not in the milk of those who were treated by infrication of mercurial ointment during lactation, though it had previously been discovered in the milk of these same patients when the mercury was administered in the form of suppositories. Abundant evidence of the presence of mercury was found in the feces of a patient who was being treated by infrication, and there appeared to be some connection between the amount eliminated and the activity of the liver. The method of analysis was one adopted in Huppert's laboratory in Prague, and was essentially an electrolytic process, which is so delicate that a 1-4,000,000th is distinctly perceptible, whilst only 1-500,000th can be recognized by means of hydrogen-sulphide.—*Lancet*, September 1, 1877.

Medicine.

On Idiopathic Anæmia.

At a meeting of the Société Médicale des Hôpitaux, held last July in Paris, M. LÉPINE read a memoir on this disease (see *The London Medical Record* for September, 1876, p. 398), which forms the basis of an important article published in the January and February numbers of the new *Revue Mensuelle de Médecine et de Chirurgie*. After introductory reference to the more exact methods of measuring degrees of anæmia which have been devised by Welcker and Malassez, including the *colorimètre* introduced a few months ago by the latter as a substitute for his *compte-globule*, M. Lépine proceeds to examine the recorded cases of fatal anæmia, whether described as idiopathic, grave, essential, progressive, or pernicious. He has endeavoured to include all described with sufficient precision during life, and followed by a *post-mortem* examination. The need of such an historical inquiry is proved by the readiness with which unlearned persons announce the discovery of new diseases which have been long ago appreciated and defined by more experienced observers. "This," he remarks, "is what Professor Biermer did some years ago. Having at Zürich met with a certain number of fatal cases of anæmia, he took no notice of any of the facts already recorded, more or less analogous to his own, even those described by the illustrious Addison; but recommends as a new discovery progressive pernicious anæmia; and such is the power of a somewhat sonorous title, that many physicians were not slow in following M. Biermer in the publication of cases of anæmia bearing the new title."

The first case of idiopathic or essential anæmia which M. Lépine cites is one recorded by Andral (*Clinique Médicale*, iii. 553–9, 1823). It is, he admits, imperfectly described, and may have been a case of Bright's disease. An

isolated case of Piorry's (Polyanhémie (!) in the *Traité des Altérations du Sang*, 1840) in a man aged 50, who died anæmic with excessively thin heart and arteries, may with more certainty be recognized as essential anæmia. The next two cases were published by Barclay in the *Medical Times* for 1851 as instances of "Death from anæmia." One in a man of 34 was certainly, the other in a woman of 40 probably, an example of the disease.

Passing over various memoirs on chlorosis and on the anæmia which often follows parturition, by Wunderlich, Canstatt, Schönlein, Lebert, and others, the author arrives at the first recognition of the disease in question by Addison, who in 1855 gave a graphic account of its clinical features, of its progressive course and fatal termination, and of the characteristic *post-mortem* appearances. He distinguished these cases from those of anæmia associated with bronzed skin and diseased suprarenals with which his name has become indissolubly connected, and applied to the former group the characteristic title, "Idiopathic anæmia." The brief but complete description of the disease given by Addison (pp. 212–13 in the Sydenham Society's edition of his works), which M. Lépine has translated into French, we give here in the original.[1] After stating that in these cases of idiopathic general anæmia "there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, renal, splenic, miasmatic, glandular, strumous, or malignant disease," and remarking that "this very remarkable disease" occurred in both sexes, and was followed by a fatal result, Addison continued as follows:—

"It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to his earliest feeling of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted, the pulse perhaps large but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and tongue seem bloodless; the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene, breathlessness and palpitations being produced by the most trifling exertion or emotion; some slight œdema is probably perceived about the ankles; the debility becomes extreme. The patient can no longer rise from his bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires. Nevertheless, to the very last, and after a sickness of, perhaps, several months' duration, the bulkiness of the general frame and the obesity often present a most striking contrast to the failure and exhaustion observable in every other respect. With perhaps a single exception, the disease, in my own experience, resisted all remedial efforts, and sooner or later terminated fatally.

"On examining the bodies of such patients after death, I have failed to discover any organic lesion that could properly or reasonably be assigned as an adequate cause of such serious consequences; nevertheless, from the disease having uniformly occurred in fat people, I was naturally led to entertain a suspicion that some form of fatty degeneration might have a share, at least, in its production; and I may observe that, in the case last examined, the heart had undergone such a change, and that a portion of the semilunar ganglion and solar plexus, on being subjected to microscopic examination, was pronounced by Mr. Quekett to have passed into a corresponding condition."

After this remarkable disease had been thus accurately defined, and its distinctive features, both clinical and pathological, laid down, it becomes easy to follow the new cases recorded, and to decide on their genuineness. The first group which M. Lépine has discovered, are nine published by Wilks in the *Guy's Hospital Reports* for 1857, as cases of "fatal anæmia," four in women and

[1] This is the more necessary, because, even in Dr. Greenhow's valuable monograph on Addison's disease, the original account of this malady is confused with that of idiopathic anæmia. Compare pp. 4–5 of Dr. Greenhow's book with the quotations above.

three in men, seven of them with the results of *post-mortem* examination; in each of these interstitial fatty degeneration of the heart is noted. In his remarks Wilks places these as illustrations of the idiopathic anæmia lately discovered by his colleague. A case of fatal anæmia soon afterwards published by Trousseau, and which now appears in the third volume of his *Clinique Médicale* (p. 63), was probably one of splenic leuchæmia; but another case of anæmia in a young man of 21, where no important lesion was found after death, which was published in 1860 by Cazenave (*Journal de Médecine de Bordeaux*, p. 53), was apparently a genuine case of the new disease, the first recorded in France, although in ignorance of Addison's and Wilks's papers. Omitting doubtful cases, the next well-marked example with necropsy occurred in a woman of 40, and was published in 1863 (*Lancet*, p. 518) by Dr. Habershon, who was, of course, acquainted with his two colleagues' observations. This paper was cited by Potain in his article "Anémie," in the *Dictionnaire Encyclopédique*, and seems to have been the first to call attention to the discovery abroad.

In 1865, and again in 1869, Perroud of Lyons (*Lyon Méd.*, 1869, tome iii. p. 281) described "fatal anæmia" with access of fever, anasarca, and fatty degeneration of the viscera, and detailed four cases (three in men) with necropsies, which M. Lépine counts as the third group of cases following the publication of Addison's description, Wilks's seven coming first, and then Cazenave's and Habershon's. One almost precisely similar was published at Bologna in 1869 by Corazza, under the title *Oligæmia with Chlorosis and Fatty Degeneration of Oryans*.

Next in order of time appeared Gusserow's six cases with necropsies, all occurring in pregnant women (Hochgradigste Anämie Schwangerer, *Arch. für Gynäcologie*, 1871, Band ii. p. 218); and soon afterwards Biermer's memoir on a peculiar form of "progressive perniciöse Anämie" appeared in the *Correspondenzblatt für schweizerische Aerzte* (1872, Band ii. No. 1). His cases all occurred in women; and he particularly called attention to the tendency to œdema, neuroses, and anorexia, the palpitation, anæmic murmurs, and intercurrent pyrexia, and lastly to the minute hemorrhages which were nearly constant in the retina, not unfrequent in the pia mater, but rare as petechiæ of the skin, as epistaxis, or hæmaturia. Fatty degeneration of the heart was almost constant. M. Lépine observes: "If MM. Gusserow and Biermer had made some bibliographical researches, they would not have committed the error of believing that the malady which they observed was peculiar to Zurich. In November, 1871, a few weeks before M. Biermer's publication, Dr. King published, in a very widely circulated journal (*The Lancet*), the following observation." Then follows a brief summary of a well-marked case of idiopathic anæmia in a woman aged 27, where the necropsy shows complete absence of visceral disease, and apparently of fatty degeneration. [This case, reported by Dr. Robert King, of the Middlesex Hospital, was under Dr. Greenhow's care, and appeared in the *British Medical Journal* for November 25 (p. 613).—*Rep.*]

In 1874, Professor Immermann, of Basil, published (in the *Deutsches Archiv*, Band xiii.) three cases, of which, however, only one was accompanied by a necropsy. It was an ordinary case of idiopathic anæmia in a woman of thirty-one; and, except fatty degeneration of the heart, there was no lesion found after death.

Passing over certain cases published under the title of pernicious anæmia, where the anæmia was really secondary to various other diseases, M. Lépine mentions as the next in order two published by Dr. Pepper in the *American Journal of the Medical Sciences* (October, 1875), in which extreme anæmia, fatty degeneration, and ecchymoses were the only *post-mortem* results. In January, 1876, Dr. Broadbent's case, in a lad treated by phosphorus, had appeared in the *Practitioner*; and in the same year Dr. Pye-Smith had published two cases, both in men, with necropsies, in Virchow's *Archiv*, Band lxv., with a vindication of Addison's priority in the recognition and description of the disease.

Next follows a paper by Scheby-Buch in the *Deutsches Archiv* (Band xvii. p. 467), with two detailed cases; and in the same year another by Quincke, in

Volkmann's *Sammlung* (No. 100), with eight cases, besides one in which there was no necropsy and another in which the patient is said to have recovered. The last on M. Lépine's list are Dr. Bradbury's case (*Brit. Med. Journal*, August 19th, 1876), which was unsuccessfully treated with phosphorus; two which occurred in Professor Küssmaul's clinic; one by M. Ferrand (*Bull. de la Société des Hôp. de Paris*, Nov. 24, 1876); and finally the one reported by himself, which will be found recorded in the last volume of this *Abstract* (p. 488).

All these forty-six completely reported cases, with *post-mortem* results, agree in their clinical features, in their fatal result, and in the absence of previous severe hemorrhage, of organic disease, and of leukæmia, whether splenic or lymphatic, with the clinical and pathological account given by Addison of idiopathic anæmia. They form a body of facts from which M. Lépine draws the following conclusions:—

1. As to *etiology*, there appears to be a clear connection of idiopathic anæmia with insufficiency of food, and also with the pregnant condition in women, and a less decisive one with dyspepsia, hard work, and loss of fluid by slight hemorrhage or by diarrhœa.

2. The *symptoms* during life are, on the whole, very constant. Most cases, especially the most marked, which occur in male subjects, bear out Addison's description of the remarkable *persistence of fat* in spite of the weakness and pallor; but in others, mostly those which have been preceded by hemorrhages, by insufficient nourishment, or long-continued dyspepsia or diarrhœa, there is excessive emaciation before death. The *cardiac murmurs* which exist may lead to mistaking idiopathic anæmia for organic disease of the heart. The *pyrexia*, which generally accompanies the disease, is irregular, both in its periods and its height, but rarely passes 104° Fahr., and, as a rule, entirely subsides shortly before death, when a temperature below normal is not infrequent. Some observers, among them Strümpbell, have found that the discharge of *urea* is increased, but this does not cease when the temperature falls.

3. The *anatomical lesions found after death* appear to be the direct result of persistent anæmia: they are *œdema*, *ecchymosis* of the serous membranes, the retina and other parts, and *fatty degeneration* of the abdominal viscera and *of the heart*. M. Lépine thinks that the frequent "tabby-mottling" of the musculi papillares of the mitral valve may explain the presence of a systolic apex-murmur, as due to actual regurgitation. Fatty degeneration of the liver, the kidneys, the peptic glands, and the cerebral arterioles is much less constant.

The experiments of Ponfick and of Tolmatscheff prove that this form of degeneration may be artificially produced by repeated bleedings. The ecchymoses of the retina may be due, like those of the meninges, to rupture of vessels which have been weakened by fatty degeneration of their coats, or of the minute aneurisms described by Charcot and Bouchard. [See new observations on this point below.]

4. *The Condition of the Blood.*—M. Lépine has remarked that in certain cases of death from exhaustion and anæmia, however brought on, there has been a marked discoloration of the viscera—different from the well-known dark tinge given by neighbourhood to the colon—and quotes an observation of Professor Grohé, who found that this dark colour depends on the presence of ferrous sulphide. He suggests that this may have some relation to the remarkable deep yellow tint of the adipose tissue in cases of idiopathic anæmia noticed by other observers, and to the curious yellow staining of the fingers described by Dr. Broadbent as the result of handling the organs in his case, "which made them look as if stained with nitric acid." The blood during life is not only diminished in actual quantity; as shown by the emptiness of the heart and veins, but the red corpuscles are diminished to a fourth, a sixth, or even, in M. Lépine's own case, measured by Malassez's *compte-globule*, to a tenth of their normal number. The proportion of white corpuscles has not yet been so accurately measured; but it is certain that they are not increased as they are in leukæmia. The red corpuscles have been observed by Ferrand and Hayem to be somewhat larger than usual, and rather deeper in colour; Quincke, on the contrary, thought them paler; many have observed that they do not readily

form *rouleaux*. A peculiarity of the blood in cases of idiopathic anæmia is the presence of minute red corpuscles, not above a fourth of the normal size, of deeper colour, and without the characteristic biconate shape. Their presence was first observed by Quincke, and has been confirmed by Eichhorst. [Both papers appeared last year; Quincke's in Volkmann's *Sammlung*, No. 100, Eichhorst's in the *Centralblatt für die medicin. Wissenschaften* for June 24th.] That the presence of these "microcytes" is not diagnostic of essential anæmia is proved by their absence in several carefully observed cases, and by their presence in one of splenic leukæmia. In a case of leukæmia myelogenica published last October by Cohnheim (Virchow's *Archiv*, Band lxviii. p. 291), there were, beside these red microcytes, nucleated red corpuscles found in the blood. [Several other microscopic observations on the blood are noticed by M. Lépine. See the continuation of this article.—*Rep.*]

5. *Relation of Idiopathic Anæmia to other Diseases.*—In a certain minority of cases, the spleen has been found more or less increased in size; and these might perhaps form transitions to the rare cases of pseudo-leucémie (leucocytosis, anæmia lymphatica) with lymphatic growths in the spleen alone; distinct on the one hand from Virchow's leuchæmia splenica by want of increase of leucocytes in the blood, and on the other from Hodgkin's disease by want of enlargement of the lymph-glands. Such cases Dr. Lépine quotes as recorded by Müller (*Berliner Klin. Wochensch.*, 1867), Pye-Smith (*Path. Trans.*, 1870), Mosler (*Path. und Ther. der Leuchämie*, 1872, p. 188), and Landouzy (*Soc. Anat.*, 1873, p. 67).

Since the discovery of the cytogenic function of red marrow by Bizzozero and Neumann, the bones have been carefully examined in cases of fatal anæmia, but generally with negative results. Even the affirmative statements made by Pepper, by Ponfick, and by Scheby-Buch cannot be regarded as conclusive. The only complete and satisfactory investigations of the point which led to a positive result are those by Professor Cohnheim and by M. Fede. The former (in the paper above quoted) reports the marrow of all the bones, in the shafts as well as in the cancellous tissue, as red, almost entirely destitute of the normal fat-cells, and made up of (1) ordinary medullary leucocytes, more numerous large colourless corpuscles with one or two nuclei, and a few giant-cells (myéloplaques); (2) of a few ordinary red blood-disks, large spherical non-nucleated red corpuscles, and a much larger number of nucleated coloured cells of variable size, but generally twice as big as a normal leucocyte. These same nucleated red corpuscles were also found in the blood-clots of the veins and in that of the liver and spleen. Cohnheim asks whether they may not be red corpuscles which have been imperfectly formed, returning, in fact, to an embryonic condition, and thus rendered incapable of circulating in the blood. The clinical features of the case (that of a man aged 35, under Professor Biermer's care at Breslau) were those of idiopathic anæmia, and there was no hypertrophy of the spleen, lymph-glands, or other cytogenic organs.

M. Fede's case occurred in a woman aged 50, exhausted by insufficient food, hardship, and bleeding, who died with symptoms of general and extreme anæmia, accompanied by slight pyrexia. There was no leukæmia, but the number of red blood-disks was diminished after death. The liver and heart were found in a state of fatty degeneration. The spleen was three times its normal bulk. All the bones were increased in size, and their compact tissue was more or less replaced by cancellous. There were a number of symmetrical exostoses on the thoracic vertebræ. The red marrow of the diseased bones was found to contain, beside normal leucocytes, large white corpuscles with one or two nuclei, and others still larger, containing red blood-disks in their interior like those normally found in the splenic vein, but no nucleated red corpuscles. M. Fede suggests that the anæmia of his case was produced by excessive destruction of red blood-disks in the bones as well as in the hypertrophied spleen.

M. Lépine believes that these two cases must be considered as genuine essential anæmia instead of being ranged with other forms of anæmia lymphatica, including Hodgkin's disease, the intestinal form described by Heschl and Béhier, and the various mixed forms in which spleen and lymph-glands and marrow have each and all been the seat of the disease. He would, then, classify cases

of idopathic or essential anæmia into three groups, according to their dependence on lesions of the cytogenic organs (*anémie progressive splénique et médullaire*), on precedent malnutrition, diarrhœa, etc. (*a. gastro-intestinale*,) or on frequent pregnancy (*a. gravidique*). M. Lépine suggests, in conclusion, that some cases of supposed idiopathic anæmia may really depend on the presence of the *sclerostoma* (*ancylostoma*) *duodenale*, which has been observed in Italy and Brazil as well as in Egypt; the symptoms of this "tropical chlorosis" closely resemble those of essential anæmia.—*London Med. Record*, August 15, 1877.

[To be continued.]

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Temperature in Febrile Disease.

Dr. Hans Wegscheider (Virchow's *Archiv*, February, 1877), writing on the distribution of temperature in febrile diseases, says:—

1. There is no constant relation between the internal temperature, as measured in the axilla, with the general temperature of the surface. We saw the first rise, while the temperature between the toes fell, and *vice versâ*.

2. Two completely symmetrical parts of the skin, as between the toes, show no proportionate course in their temperature; not only do they differ by not rising or falling to the same level, but one may rise while the other remains stationary or falls, and *vice versâ*.

3. There is greater variation in the temperature-curves in the same part of the skin in the same person in fever than in health; but in fever there is a striking fall of temperature, notably lower than in the healthy state. However, in those people who suffer from cold feet, the temperature is often as low, or somewhat lower.

4 It follows from the last, that there is a greater difference in fever between the temperature of the axilla and that of the periphery than any changes of local temperature which may occur in health.

From all the foregoing, he concludes that the vessels of the skin in fever are in an abnormally irritable condition.

He did not find any noteworthy differences between the temperature of the two axillæ in unilateral affections of the thoracic organs. At any rate, in pleurisy there was no constant relation. In one case, in which both pleuræ were affected, the side with the greatest effusion had the lower temperature. His observations on pneumonia were too few to give a definite result, but the differences he observed were not so great as Landrieux has asserted.—*London Med. Record*, July 15, 1877.

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The Complications of Scarlet Fever and their Treatment.

At a recent meeting of the Section on Practice of Medicine of the New York Academy of Medicine, the subject for discussion was the ordinary complications, the treatment of scarlet fever, and the treatment of the ocular and aural complications.

Dr. J. Lewis Smith spoke with reference to the ordinary complications as follows: He directed attention first to the *nervous complications*, which, when present, were accompanied by rapid pulse, marked elevation of temperature, and occasional eclampsia, and rendered the cases more than ordinarily grave. The causes of this complication were noted under two heads:—

First. Active congestion of the cerebro-spinal axis.

Second. Direct disturbing influence of the specific poison upon the nervous system.

The earlier and milder eclampsia was not usually serious, but the protracted and later eclampsia was exceedingly grave. There was a predominance of blood-poisoning as a factor in causing this complication, however early it might appear, but in the early cases it was rarely fatal. Eclampsia occurring in the later stages was usually fatal, and was dependent upon the scarlatinal poison. It had been observed that eclampsia occurring in scarlet fever always proved fatal except when occurring before or just in the beginning of the eruptive stage,

but Dr. Smith was of the opinion that by the combined use of the bromides and chloral occasional cases of eclampsia occurring at a later period had been saved. By far the larger proportion, however, of cases with this complication perished, except when it occurred at the initial stage of the disease.

Throat Complication of Scarlet Fever.—Inflammation commencing in the absorbents and lymphatic glands along the side of the neck, and extending to the connective tissue, which was serious in proportion to the induration and swelling. This complication was produced by the absorbents taking up the poisonous material upon the mucous surface. It was believed to be a less frequent complication since it had become customary to disinfect the fauces as a part of the treatment of scarlet fever, than it was in former times. There had been very much less of that complication in New York during the last five or six years than prior to that date, and it was explained by the use of the local disinfectant treatment. Formerly the sore throat of scarlet fever had been treated largely by means of external applications, but since the internal treatment by means of antiseptic and disinfectant applications had been employed, the cervical cellulitis had been very much less than formerly. In this connection allusion was made to the fact that the type of the disease might change. Scarlet fever changed its type the most frequently of any disease, and diptheria came next in order. It had been the case that the mortality from scarlet fever had been very much less of late years than formerly, and it might be that it was because the type of the disease had changed, rather than due to any improved method of treatment.

The throat complication, cervical cellulitis, etc., produced death in one of three different ways:—

1. By producing exhaustion as the result of ulceration, and sloughing, and suppuration, with or without hemorrhage.

2. By causing œdema of the larynx, either from pressure directly upon the larynx or upon the pneumogastric nerve.

3. More frequently by retarding the flow of blood from the brain by pressure upon the jugular veins. Such pressure gave rise to congestion of the cranial sinuses, veins, and capillaries of the brain and meninges, and perhaps, as a result, gave rise to transudation of serum.

Dr. Smith was of the opinion that in a certain proportion of cases, in which it was formerly supposed that death had been due to the effect of the scarlatinous poison, it had occurred as the result of pressure upon the jugular veins, produced by the cervical adenitis and cellulitis.

Reference was made to cases in which death was caused by conditions secondary to the pressure produced by an enlarged bronchial gland upon the veins at the point where they converge to form the descending innominata.

Diphtheria as a Complication of Scarlet Fever.—Diphtheria as a complication of scarlet fever had been of very frequent occurrence in New York, as it would be in any locality where diphtheria had prevailed and scarlet fever made its appearance. This complication occurred as early as the middle or at the close of the first week. In this connection reference was made to the fact that diphtheritic virus might remain in a room for two months and then give rise to the disease; the scarlatinous poison might remain in a room three months and still retain the power of producing the affection.

Scarlet fever invited diphtheria, but diphtheria did not return the compliment.

Sometimes, where the sanitary conditions were apparently good, where there had been no exposure to diphtheria outside of the house, scarlet fever had recurred, became complicated with diphtheria, and then the diphtheria became disassociated from the scarlet fever and appeared as an independent disease.

Dr. Smith referred to illustrative cases; four cases of diphtheria occurring without scarlet fever, the latter disease, however, bringing the diphtheria into the house.

Rheumatism was another complication; more commonly appeared in the joints of the upper extremities; was not usually of much gravity, and did not seem to retard the convalescence of the patient.

Gangrene of the mouth had been observed in a few instances; perhaps no more apt to occur as a complication of scarlet fever than of any other disease

which equally prostrated the patient. Enteritis occasionally occurred as a complication; a relaxed condition of bowels was common in cases of malignant scarlatina, but the patients usually did very well when the discharges were controlled.

There was also a liability to the occurrence of serous inflammations independent of kidney disease. Of course, in acute Bright's disease there was a marked tendency to the occurrence of serous inflammations, like pericarditis and endocarditis, etc., usually attributed to the effect of the urea circulating in the blood; but when the kidneys did not become specially involved, such tendency to serous inflammation might be developed in connection with scarlet fever.

Nephritis was commonly regarded as a sequel to scarlatina, but Dr. Smith was inclined to regard the kidney disease as a complication, and one of earlier occurrence than physicians usually believed. It was thought that if the urine was examined at each visit it would be found that albumen was present before the eruption had faded away. Physicians, generally, were not in the habit of examining the urine until other symptoms of nephritis, as anasarca, etc., were developed; hence, it was believed that it was a complication of more frequent occurrence than was usually supposed.

Ocular and Aural Complications.—Dr. H. D. Noyes remarked with reference to the ocular and aural complications in scarlet fever, that they might occur early or late in the course of the disease, but usually late, especially with reference to the eye. The mode of origin was in the first place direct; that is, by immediate extension of the inflammation from the skin to the mucous membranes of these organs. That was by far the most frequent mode in which the eye and ear became affected.

Second. They became affected from blood-poisoning, and the blood-poisoning occurring as uræmia, embolism, or pyæmia.

The affection of the ear was most common and occurred at the earliest period, the affection of the eye occurring more commonly at a much later period. In the inflammatory affection of the ear and eye, which occurred simply as the result of an extension of the inflammation to those organs, there was nothing peculiar in the pathological process. The same pathological conditions were found without scarlet fever as occurred in connection with it; but the peculiar and important fact in the scarlet fever cases was that we were dealing with organs whose integrity was essential, and whose power of resistance was greatly impaired in consequence of the general condition of the system. An acute process, under such circumstances, was likely to be much more destructive, simply because the patient was in an unfavourable condition of health. As far as the actual lesions were concerned in the eye complications, there was, more commonly, inflammation of the conjunctiva, of the lids, and of the cornea. There was, however, no special line of treatment for such cases of inflammation, other than that which would be appropriate for the treatment of the same difficulty occurring in children without scarlet fever, except that we were to take into consideration the general condition of the patient, sustain nutrition, and do what was possible to antidote the poison, and thus facilitate the action of local remedies. Any severe local applications to the eye were always out of place. If nitrate of silver was used it must be only in the weakest solutions—not more than grs. v to ℥i of water, and much more commonly grs. ij to the ℥i of water. As a rule astringents of only the simplest kind should be employed, such as alum, etc.; and the sulphate of zinc, and sulphate of copper should be ignored, as they were liable to do mischief. Attention should be especially directed to the cornea, for it rapidly broke down, and became destroyed. It was needful, therefore, to use a local anodyne in the form of sulphate of atropia grs. ij to the ℥i of water, of which from one to three drops were to be dropped into the eye three times a day; and in addition, the eyes were to be bathed freely with warm water. Such was the usual outline of treatment for affections of the eye in connection with scarlet fever. For the photophobia which might be present a moderate exclusion of light was recommended. The ear trouble more commonly produced disastrous consequences, and was developed in two ways: 1. By extension of the inflammation and giving rise to otitis externa; and 2. By

extension from the pharynx up the Eustachian tube, and terminating in otitis interna. The history of otitis interna and otitis externa in connection with scarlet fever was precisely the same as when they occurred without scarlet fever, with the exception that the issues broke down more rapidly. It therefore became needful to make use of warm fomentations, and the warm douche externally, and very carefully to watch the condition of the drum membrane. If upon inspection it appeared sodden and swollen, and showed any signs of an acute process going on inside, it was far better to make an unnecessary puncture of the tympanum than to leave the ulcerative process to complete itself in the natural manner. The puncture did no harm, and the tissues would not be destroyed to anything like the same degree as if the ulcerative action was permitted to complete itself, thus allowing the pus to escape by the natural process.

In the same manner extension of the inflammation might take place into the mastoid cells, and the surgeon should carefully inspect the mastoid process, examine with the finger, and if any tenderness was present should, without hesitation, resort to leeches. If a marked degree of tenderness was present, he should make a free incision over the affected part.

Dr. Noyes did not hesitate to recommend injections through the nostrils in cases which seemed to demand local treatment of the nasal passages, notwithstanding so much had been said concerning the inefficiency and the deleterious results which might follow the use of the nasal douche.

When suppurative action occurred in the middle ear, the pus should be evacuated thoroughly. Sometimes it was necessary to resort to inflation with the Politzer bag in order to accomplish a thorough removal of the pus. In children such inflation was very easy, because all that was necessary was simply to place the tube of the bag in the nostril, shut the nose over it, have the mouth closed, and then simply blow; no water or swallowing being necessary. In that manner secretions could often be driven out from the middle ear better than with the syringe. The syringing should be by a copious stream of water.

When the secretions were removed by the simple douche, very warm water should be employed—99° F., perhaps a little higher. For syringing to be efficient, not less than a two-ounce syringe should be used, having a long, slender nozzle, to which should be attached a simple bit of rubber-tubing to prevent the terminal extremity of the nozzle from doing injury.

The treatment of the aural complication when it became chronic, when perforation of the tympanum had occurred and a chronic discharge existed, it was not thought necessary to dwell upon.

There was another class of cases in which blood-poisoning was the cause of the eye complication. The condition was that of neuro-retinitis, due to the Bright's disease incident to scarlet fever. The prognosis in those cases was usually good; sight was usually recovered, partially, at least, and sometimes completely. It usually occurred without marked symptoms, as far as the patient was concerned, saving, perhaps, a certain amount of flashes of light and a certain amount (perhaps very trifling) of dimness of vision. There was no condition of the ear which stood in an analogous relation to that affection of the eye.—*Med. Record*, Aug. 4, 1877.

Insomnia and its Treatment.

In the numbers of the *Archives Générales de Médecine* for May and June, 1877, appears an article on this subject by Villemin. There is no attempt at anything novel or original in the paper, but it consists of a careful compilation of the views of different writers on insomnia. The question is treated under three heads—1, the physiology of sleep; 2, the causes of insomnia; 3, the treatment of insomnia. The general conclusions from the whole article are as follows.

1. Sleep is the result of a diminution of cerebral cell activity, induced by the fatigue or exhaustion following mental or bodily exertion. These physical conditions modify the vaso-motor system; the afflux of blood to the brain is

reduced, and a condition of temporary anæmia takes place. The cerebral activity is thus diminished, and sleep follows, during which the nervous elements are repaired.

2. The cause of insomnia is a persistent abnormal activity of the cerebral nervous elements, due to some internal or external irritation. It may also be due to active congestion of the brain, which causes abnormal functional activity of its cellular substance.

3. Insomnia may also be the result of a peculiar nervous condition, associated with general anæmia, in which, owing to changes in the nervous elements, there is a modification in the circulation of the brain.

4. In the treatment of insomnia, it is important to first ascertain its cause. Slight cases are usually successfully treated by general hygienic measures.

5. Insomnia occurring during acute or chronic maladies cannot, as a rule, be rapidly relieved. Therefore, while waiting the recovery of the disease, the symptom is to be treated with hypnotics, at the head of which is opium and its alkaloids.

6. Morphia is the most somniferous principle of opium. Narcein and codeine, although less active in this respect, leave fewer traces of headache and malaise. Opium preparations are more particularly useful in insomnia associated with pain. They are contra-indicated when there exists any cerebral congestion.

7. Bromide of potassium has a much less powerful hypnotic action than opium. Its use is indicated in those cases due to excitement of the cerebral circulation, in which opiates are useless and injurious. It has been employed successfully as a calmative in children. It is contra-indicated in cases of marked anæmia.

8. Sulphate of quinine, like the bromide, appears to exercise the action of relieving the congestion of the cerebral nervous elements.

9. Hydrate of chloral is an excellent hypnotic in almost all cases of insomnia, but it is to be given with caution to persons suffering from dyspnœa, cardiac affections, or great debility.

10. The insomnia of old persons or patients suffering from great debility or anæmia is sometimes successfully treated by tonics, stimulants, and hydropathy.—*London Med. Record*, Aug. 15, 1877.

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The Cardio-Vascular Phenomena of Epilepsy.

The cardio-vascular phenomena of epilepsy have never, so far as we are aware, been fully investigated. Certain points, such as the condition of the pulse during and after an epileptic fit, and also the changes observed in the retinal vessels, have received some attention, though the statements which have been made as to the latter are contradictory, some stating that vaso-motor spasmodic contraction is the condition observed, others that turgescence accompanies or follows the fit. And from these observations various theoretical conclusions as to the nature and treatment of epilepsy have been drawn.

Some important experiments have been recently made upon this subject by Dr. Magnan, whose observations on artificial epilepsy are well known. The experiments were made on dogs in which artificial epilepsy had been induced by the injection of absinthe, the epilepsy thus produced being, as M. Magnan has shown, in every respect like ordinary epilepsy as to the phenomena observed. His object was to ascertain the condition of the arterial pressure during the fit, and then to compare the pulse and arterial tension with the muscular contractions, in order to discover their relations. In one set of experiments the observations were made by means of Ludwig's kymographion applied to the femoral artery, in the other the comparison was made by Marey's polygraph, a tube being inserted into the carotid, and the other index attached to the hind limb of the animal.

In the first sets of experiments it was found that during the period of tonic spasm the pulse became more frequent, its respiratory curve entirely lost, and the arterial pressure rapidly rose, attaining its maximum near the end of the

tonic period, the oscillations of the lever being short and abrupt. With the onset of clonic spasm the pulse became extremely slow—from six to eight times less than normal—the pressure falling enormously, and during the diastolic period being almost *nil*. With the end of the clonic spasms the pulse regained its normal frequency or became rather more rapid than normal. It was found that section of the vagus had the effect of entirely removing these phenomena. The heart's action was of course accelerated, as is always the case, and the respiratory curve was annulled during the tonic spasm, in consequence of fixation of the chest-walls, but the arterial pressure did not rise during the tonic period, nor did the retardation and fall of pressure take place during the clonic spasms.

The second set of experiments were made for the purpose of comparing the vascular phenomena with the muscular spasms. During the tonic period the latter were indicated by a nearly straight line, interrupted by very fine waves, showing the rapidly succeeding contractions which constitute the tonic spasm. This condition lasted for about six seconds; then the vibrations became more ample and slower, gradually increasing in amplitude and diminishing in frequency to the end of the clonic period, when their entire cessation is indicated by a straight line. This clonic period lasted about thirty seconds. As in the other experiments, slowing of the pulse and enormous fall in arterial pressure were observed during the clonic period. During the tonic spasm the pressure in the carotid, which before the fit was fourteen centimetres, rose to seventeen centimetres, then rapidly fell as low as seven centimetres during the more rapid clonic spasms, rising again towards the end of this period to fifteen centimetres, the pulse at the same time increasing in frequency. Immediately after the fit the normal pressure was regained, and the pulse returned to nearly its usual pace, though slightly accelerated. M. Magnan found, however, that this acceleration of the pulse was not more than would have been produced by a similar amount of muscular exertion, and that, as a matter of fact, it was proved, by numerous observations on epileptics just after a fit, that the acceleration of the pulse is not greater than was produced in a healthy person by scrubbing the floor for three minutes.

The observations seem to prove, as M. Magnan observes, that the heart is partially tetanized during the tonic convulsion, and contracts rapidly and forcibly, but does not dilate properly, this tetanic contraction being produced through the vagus nerve. The extreme fall in the pressure and slow action which ensue may not improbably be due to temporary exhaustion of the heart muscle, and gradual readjustment of the cardiac and arterial pressure, the diastole being much prolonged, the systole incomplete and feeble. M. Magnan points out that the fatal result which sometimes occurs during an epileptic fit may be due to the heart, either by tetanization during the tonic spasm, or by syncope during the clonic period and lower arterial pressure. The former mode of death would be analogous to that in digitalis poisoning, but the short duration of the contracted condition makes it probable that such a result would be extremely rare. These experiments raise some very interesting speculations as to the causation of the phenomena of an epileptic fit, which would be out of place here. But it would be worth while to ascertain whether vaso-motor spasm had not something to do with the increased arterial pressure in "natural," if not in artificial epilepsy.—*Lancet*, Aug. 25, 1877.

Albuminuria as a Symptom of (Recent) Epileptic Attacks.

In the *Berliner Klinische Wochenschrift* for Oct. 16 (No. 42), 1876, Dr. Otto, of Pforzheim, reviews the controversy between Huppert—whose paper in Virchow's *Archiv*, Band 59, affirmed that albumen was almost always present after an epileptic seizure, whether complete or abortive—and Karrer, who, in the weekly journal above quoted, denied the accuracy of Huppert's conclusions, on the grounds of experiments made on the urine of twelve epileptics. Huppert's test was boiling and nitric acid, and he trusted a good deal to turbidity after standing. Karrer used the more delicate test with ferro-cyanide of potassium. Dr. Otto now adduces 31 examinations of urine, using the same reactions

as Karrer; the urine was taken immediately after the epileptic paroxysms, and he took care to satisfy himself that, in the intervals, the patient's urine was free from albumen. Two hours after the attack, the urine was again taken and tested. In the urine passed immediately after the fits, boiling and nitric acid never gave him any reaction indicating albumen. Ferro-cyanide of potassium gave a precipitate in three instances, very copiously once; and cloudy turbidity three times. In the urine taken two hours after the attack, boiling and nitric acid gave strong turbidity twice, and a bulky precipitate once; that tested with ferro-cyanide of potassium gave turbidity six times, and precipitates six times. Altogether, there were albuminous reactions 22 times in 31 cases, or 14 times with one reagent, four times with both; precipitates 12 times, turbidity 12 times. If the turbidity be allowed as a sign of albuminuria, it must still be said that it is not every attack of epilepsy which produces temporary albuminuria. If we reject mere turbidity and insist on a precipitate, we shall find that there were only 12 of the epileptic seizures which were followed by albuminuria. The 31 attacks were in twelve patients; the 22 reactions in seven patients; so that there were five patients whose urine gave no traces of albumen after the paroxysms. On several occasions, in the same patient, the urine after one attack showed albumen, but showed none after another attack. The twelve cases with precipitates were in six patients. All those with albumen were severe and complete paroxysms. But so were several of those in which there was no albuminuria. After abortive attacks, no albumen was found in any case. The most severe attacks showed most albumen. The presence of this substance was doubtless due to the disturbed circulation and altered blood-pressure. The presence of albumen in the urine is, therefore, only a corroborative proof of such attacks, and its absence does not prove that there has been no paroxysm.

[The reporter, in commenting on this controversy, in a previous number, came to the same conclusion as Dr. Otto from his own experiments. He begs to suggest, in future inquiries, that not less than three or four tests should be used. As nitric acid and boiling, and prussiate of potash have already been tried, why not use, 1, alcohol; 2, a saturated solution of picric acid; 3, Tidy and Méhu's test, *i. e.*, crystallized carbolic and glacial acetic acid in equal parts; and 4, Millon's reagent, the acid nitrate of mercury?]—*Lond. Med. Record*, July 15, 1877.

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A Large Fibroma of the Larynx as a Real Cause of Epileptic Seizures.

Dr. JULIUS SOMMERBRODT describes and figures the following case in No. 39 of the *Berliner Klinische Wochenschrift* for 1876 (September 25). The patient was a gentleman, aged fifty-four, who said that, in 1867, he had been drenched to the skin. Ever since he had been somewhat hoarse, otherwise he was quite healthy. He sought advice for this in 1874. Laryngoscopy showed a large polypoid growth in the larynx. It was attached to the left true vocal cord, and lay over it, so that about four-tenths of an inch in length, and about one-fifth of an inch in breadth, was covered by it; but the posterior part of the vocal cord was not covered by it. It extended about halfway over the rima glottidis, and the remaining half of it reached the sacculus laryngis. The tumour was red and firm, its base was broad. The patient wished to postpone operations of any kind, but, in the winter of 1874–75, the hoarseness increased, and he had considerable dyspnœa.

From February, 1875, with intervals of some weeks, and by preference at night, attacks of clonic spasms, with loss of consciousness, foaming at the mouth, biting of the tongue, etc., set in. After one of these in March, some paralysis of the left arm and leg, and, to some extent, of the face also, was left behind. Gradually the fits became more frequent—often several would occur in one day. The dyspnœa increased. Bromide of potassium, ordered by Professor Biermer, was powerless to arrest the fits. There was no aura to be discovered. An operation to relieve the dyspnœa was determined on. The tumour was now much larger. Its weight caused it to sink deep into the rima glottidis, which it almost perfectly filled. Its shape was triangular. The right

true vocal cord was quite free from it, and the left could also be seen for most of its length in spite of its connection with the tumour. The last fit was on September 10, and again, *as usual, after he had slept some time lying on his back.* After trying to snare it for several days successively, Dr. Sommerbrodt, on the fifth day, cut away a piece with a sickle-shaped and probe-pointed laryngeal knife. The next day (September 18) he was fortunate enough to be able (with his left hand, on account of the left sided position of the tumour) to cut away the whole tumour, which the patient coughed or spat out almost immediately. A minute fragment remained in the anterior part of the vocal cord. The bleeding was very slight.

The tumour examined by Dr. Weigert was a firm fibroma; it was one inch long, one-fourth of an inch in its greatest width, and one-third of an inch deep or thick. It fitted the glottis like a wedge, and had some papillomatous outgrowths at the end. The remaining fragment was removed by forceps. The operation was favourable in every way.

Five months after the operation, not only had there been no return of the tumour, but the patient had been and remained perfectly free from his epileptiform attacks. As many laryngeal tumours have been noted without epilepsy, we might hesitate to ascribe the fits to this, only that fifteen years before he had slight epileptiform seizures, which were ascribed to a cicatrix on the back of his hand. This was removed, and the fits ceased with its removal, until the growth of the fibroma of his larynx, or the epilepsia thoracica of Anthorst. The case is, therefore, one of sympathetic epilepsy.—*London Medical Record*, Aug. 5, 1877.

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On Saltatoric Spasm.

(*Concluded from page* 403.)

In the *Lancet* for August 4, Dr. GOWERS concludes his interesting paper on this rare form of spasm. He says:—

A comparison of the symptoms present in the seven cases which are now on record shows a remarkable variety in the circumstances under which the saltatoric spasm occurs, and in the symptoms with which it is immediately associated.

Four of the patients were males, and three were females. Their ages varied from ten to seventy years. In only two cases was there evidence of an inherited tendency to disease of the nervous system, but in four there was a history of past nervous disturbance; in one, a febrile attack, with hallucinations and headache; in one, slight hysterical symptoms; in two, epileptoid attacks. In almost every case some depressing influence could be traced as the predisposing cause of the affection. Weakness from pneumonia, from gastric ulcer, from bronchitis, and mental depression, appear among the predisposing influences. In one case the symptoms came on the day after a severe exposure to cold, and in one they followed an epileptoid seizure. In six out of seven cases the onset of the symptoms was more or less sudden; in one case they were preceded for a day or two by rigidity, and in one case by tremor, in the limbs. In two cases sensory symptoms were noticed before the attack; in one there was a sense of weight in the legs for a fortnight; in the other, a gradual onset of the affection was preceded for two months by "rending" pains in the legs. The only symptom not connected with the legs which accompanied, in any case, the onset of the affection, was the loss of sight, which, in my second case, lasted for several hours after the epileptoid seizure with which the attack began.

The saltatoric spasm had in each instance common and characteristic features. It consisted in strong, quick contractions of the extensors and flexors of the legs, alternating, succeeding each other with great rapidity, and causing springing or jumping movements. In several cases it would appear from the descriptions that the feet left the ground entirely at every spring; but it was not so in the patients whose attacks I witnessed. In one of them the heels were raised several inches, and struck the floor with force on their descent; in the other the springing movements were from the hip and knee joints. In

almost every case the muscles of the back seemed to share the spasm, and determined a backward inclination of the body in its upward movement; while in some cases a lateral inclination was noticed, consequent probably on a slight inequality in the degree of affection of the two legs. In one or two cases it was noted that there was some tonic rigidity as well as clonic spasm. The spasm in most cases was so violent as to throw the patient to the ground unless supported, and to render walking impossible, even with assistance. After a few seconds the patient was breathless and exhausted.

The spasm, however violent during an attempt to stand, lasted only during that attempt, and for the most part ceased when the patient sat or lay down. The cessation was in several cases sudden and complete. In two cases slight clonic spasm persisted for a few minutes, accompanied in one case by rigidity. In six out of the seven cases the movements were synchronous in the two legs; but in one case the spasm, synchronous at the commencement of each paroxysm, alternated after a few seconds, so as to cause a peculiar movement. In no case, apparently, did the saltatoric spasm, excited by standing, spread to the arms; and it was excited by no other posture than standing, except in my first case, in which, at one time, similar spasm occurred in the back in the sitting and kneeling postures.

In several cases, however, clonic spasm could be excited by other stimuli than the attempt to stand. In three, slight clonic spasm occurred in the legs when, in the recumbent posture, the feet were pressed against a firm object. This was no doubt analogous to the spasm which was excited by the standing posture, and may be distinguished (even though it cannot be separated) from the remarkable spasmodic phenomena which in several cases were excited by other stimuli. In one case, and in one only, did tickling the sole cause spasm, clonic spreading slowly to the arm, and then to the other leg. In another case a light percussion of the sole caused spasm, which spread slowly to the other leg. In four cases, however, clonic spasm resulted from voluntary movement of the limbs. This was distinct, although slight, in each case I have recorded, and was confined to the right leg, and, curiously, in one case spasm occurred in the right leg when the left was moved. In Bamberger's second case, at one period, movement in bed caused violent spasm in all the limbs and the back. The most remarkable attacks of this character, however, are those which occurred in Frey's case whenever the left arm or right leg was moved, and spread in a uniform order to the other limbs, although movement of these excited no spasm. Spontaneous spasm of the legs is mentioned in two cases, but in each was slight and transient. Thus the arms participated in two cases in the spasm which accompanied voluntary movement, and, in one case, in that which resulted from cutaneous stimulation, although, as already mentioned, they apparently did not in any case participate in the spasm which was caused by standing.

The special saltatoric spasm was in two cases rendered more intense by emotion, and in one of these varied remarkably at different periods of the day, being most intense at the period when many forms of chronic nerve disturbance are most intense—in the morning.

The power of the limbs was apparently unaffected in five cases. In the transient case I have described the right leg was weaker than the left. In Frey's case the limbs in which the spasm occurred on passive or active movement exhibited after a time weakness and considerable wasting. Sensation, when tested, seems to have been little affected. In four cases spinal tenderness was present; in three cases over the cervical enlargement, and in two of these also over the lumbar enlargement. In the fourth the tenderness was confined to the mid-dorsal region. Other remarkable symptoms—dyspnœa, palpitation, spasm of the lower part of the face, and spontaneous movements of the pupil—were present in Bamberger's first case, and are of great interest in connection with the localization of the disturbed function.

The duration of the affection varied; in only two cases was it less than a month, in one two days, and in the other eighteen days. In four cases it lasted several months, and in one it persisted to the end of life, six years after the commencement of the spasm. The mode of termination is detailed in the

accounts of six of the cases, and was gradual in two, more or less sudden in four, the termination being in several cases accompanied by other slight symptoms of nerve disturbance.

In two cases more than one attack occurred. In Bamberger's second case there were two attacks, the second being slighter and occurring a few months after the first. The first case I have described is remarkable from the number of attacks, the patient having had four; at eighteen, nineteen and a half, twenty-one, and twenty-two years respectively, each lasting several months. The last two attacks were more severe than the first two, but recovery was complete and permanent.

Bamberger suggested that the saltatoric spasm is probably due to an excessive excitability of the spinal cord, to a "true spinal irritation," a functional disturbance unattended with any visible structural change. He believed that the spasms were reflex, excited by a peripheral impression, probably the pressure of the soles of the feet against the floor in the standing posture. In this opinion most of those who have narrated cases have concurred.

The occurrence of the special spasm chiefly when the sufferer attempts to stand is strong, almost conclusive, evidence of its reflex character. In several cases it could be excited in slight degree by pressure against the sole, when the patient was not standing, and it is on this ground the stimulation of the plantar nerves has been thought to be the excitant. But in several cases it could not be thus excited in the recumbent posture.

The question of its origin is complicated by the fact that in several cases clonic spasm of a somewhat different distribution was excited, when the patient was recumbent, by reflex irritation, either cutaneous or by passive movement, and that it occurred also on active movement of the limbs. This spasm differed from that which occurred on standing, not only in its mode of production, but in its slower evolution and extension, and in the involvement of the arms. It is evidently the indication of an excitation of a wider area of central gray substance than that involved in the actual saltatoric spasm.

This special saltatoric spasm, the violent alternate contraction of flexors and extensors which results in the springing movement, is probably the result of two influences. The reflex impressions involved in the erect posture act upon the centre for the co-ordination of the muscular contractions, a centre which these impressions find already in a state of voluntary stimulation, and in its abnormally irritable state the violent saltatoric spasms are liberated. The influence of the voluntary stimulation of the centre on the production of spasm is shown in the fact that in almost every case, at some period, voluntary movement was attended by jerkings resembling remotely those of the saltatoric movement. Moreover, in the first case I have recorded, during the most intense period of the affection, the sitting posture excited jerking spasm in the muscles of the back, which did not accompany movement in bed. Here it must have been the excitation of a special co-ordinating centre, aided perhaps by peripheral impressions from the muscles themselves, or from the skin, which caused the spasm. The saltatoric spasm may thus be regarded as excited by the reflex influence, its form and character being determined, however, and its extent limited, by the voluntary stimulation of the irritable centre. Where no such voluntary stimulation occurred (as in that excited by cutaneous stimulation) the distribution of the reflex spasm was less determinate.

It has been assumed by each writer on the subject that the seat of the morbid process is the spinal cord. The grounds for this opinion are the known reflex functions of the cord, the intermitting spasms of strychnia poisoning, and the fact that, in most of the cases in which it was looked for, some spinal tenderness existed, and in one case pressure on the tender spine excited clonic spasm. The opinion has received important and very interesting confirmation from recent experiments on the reflex action of the spinal cord in the mammalia, although they leave it still somewhat uncertain in what part of the cord we are to locate the morbid process.

Freusberg has shown (as Frey remarks) that in rabbits regular alternating contractions of the flexors and extensors of the hind legs may be co-ordinated

in the lumbar enlargement.[1] He divided the spinal cord of a rabbit opposite the last dorsal vertebra, and when the animal had recovered from the immediate effects of the operation, there was such reflex irritability in the (of course paralyzed) legs, that when the animal was held up the hind legs were regularly flexed and extended sixty or seventy times in a minute. The following observation makes it probable that a similar co-ordination may be effected in the lumbar enlargement of the spinal cord of man. Movements in the legs very similar to those described by Freusberg are presented by a patient now in the Hospital for Paralysis and Epilepsy, with disease of the spinal cord, under the care of Dr. Hughlings-Jackson. Sensibility to touch is lost, and to pain is diminished, as high as the lower ribs. Power is almost lost over the legs, but the muscles are not wasted. Reflex excitability is excessive; the legs are often strongly flexed, but can be passively extended by considerable force. When nearly extended, manipulation of the limbs, or a push against the soles of the feet, sets up a series of regular alternate flexions and extensions of the hip-, knee-, and ankle-joint, by which the feet are drawn up and pushed down five or six inches. Flexion occupies not more than half the time which extension occupies. The movements are quite involuntary. A slighter rhythmical contraction of the quadriceps extensor can often be observed when no movement results. The movements are synchronous in the two legs, and can be produced in both by passive movement of one leg. They can be inhibited by a firm grasp round either thigh, and pressure on the muscles, but recur with increased force when the pressure is removed. Each movement occupies rather less than a second, and therefore this frequency is almost the same as that of the movements in the rabbit. But it is to be observed that these movements are far less frequent than those of saltatoric spasm, of which several occur in each second.

Although it is not easy to believe that a difference in time can indicate a difference in the position of the mechanism causing the movements, it is important to note some experiments of Woroschiloff,[2] which have led him to the conclusion that there exists in the upper part of the cervical enlargement a centre which co-ordinates rapid springing movements of the hind legs. He found that in the rabbits electrical stimulation of a section of the cord above the sixth cervical pair of nerves caused rapid alternate flexion and extension of the hind legs, "similar in form and strength to those which cause springing movements," while a similar stimulation of a section below that point caused only a rigid tetanus. The indications of excitement of a high region of the cord in several cases of saltatoric spasm (extension of the spasm on standing to the muscles of the neck and back, affection of the arms in the reflex spasm, and the phenomena of Bamberger's first case) lend additional weight to the significance of Woroschiloff's observation.

The close bilateral association of the affected centres is strikingly shown in the synchronism of the spasm in each case and in such phenomena as that presented by my second case, in which, while the child was lying on the couch, the right leg jerked while the left leg was steadily raised. Although the right leg was affected only in the recumbent posture, the spasm on standing was equal in the two legs. This is in harmony with the reflex excitation of the spasm.

An experiment of Freusberg[3] illustrates again the want of synchronism in the spasm in the two legs which existed in one patient. After division of the cord in the lower dorsal region, he divided one sciatic nerve so as to render one limb insensitive. After a time, on lifting the dog, first both limbs were strongly extended, and then there were alternate movements of flexion and extension, but the movements were not synchronous. Simultaneously with the flexion of one leg the other was extended, and *vice versa*.

In every case in which a difference existed between the symptoms in the two legs, the affection of the right was the more considerable. This may be associated with the right being the "leading" leg in functional training.

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[1] Pflüger's Archiv, Bd. ix.

[2] Ludwig's Arbeiten, 1874, p. 110.

[3] Loc. cit.

I have said that we may distinguish, even though we cannot separate, the saltatoric spasm from the remarkable clonic spasm which was excited by cutaneous and other stimuli in the recumbent posture. The extension of the latter indicates the involvement of a wider area of central gray matter than the more limited, though more intense, saltatoric spasm, and I have hinted that this difference may be explained by the double voluntary and reflex excitation of the co-ordinating centre affected in saltatoric spasm, whereas the spasm which spreads more widely was determined exclusively by the reflex stimulation of the irritable centre. Recent experiments have thrown very interesting light on the probable position of the area of gray matter affected in this more widely-spreading spasm. The most striking feature was the extension of the spasm from the legs to the arms, and *vice versa*. Owsjannikow[1] has found that if the medulla of a rabbit be divided at the point of the calamus scriptorius, stimulation of the fore or hind legs causes local reflex action, limited to the fore or hind legs respectively; whereas, if the medulla be divided a few millimetres higher up, about the junction of the lower and middle thirds of the floor of the fourth ventricle, reflex movements may occur in the fore legs from stimulation of the hind legs, and *vice versa;* and hence he concludes that there exists in the lower part of the medulla a special centre for combining and co-ordinating the reflex movements of the anterior and posterior extremities. This centre may be supposed to be affected in the cases of saltatoric spasm in which the spreading spasm was observed. The supposition derives additional probability from the symptoms present in Bamberger's first case, and the occurrence of these is explained by Owsjannikow's observation. For this reflex centre appears to correspond in vertical extent with, and to lie beneath, the respiratory centre of the medulla. It lies, or extends, a little distance from the middle line on each side, and therefore must be contiguous to the vagal nuclei, while through this region there pass down the prolongations from the facial nuclei which are believed to subserve the movements of the lips. In Bamberger's case, the extension to the arm of the spasm caused by cutaneous stimulation of the leg, affords evidence of the affection of the higher combining centre of the medulla, and by an extension of the irritation to the gray matter in such close contiguity to this centre, the dyspnœa, palpitation, and facial spasm are easily explained.

The extreme muscular atrophy which, in Frey's case, occurred in the limbs in which the reflex irritability was most considerable, may probably be explained by assuming that the overaction of the gray matter has set up a destructive local infiltration of leucocytes, such as are to be seen in the medulla in hydrophobia, and in the spinal cord in severe cases of canine chorea.

It is of interest to note other forms of clonic spasm, which present certain points of association with saltatoric spasm. One of these is the very common form of clonic spasm in the gastrocnemius which is excited by putting the muscle suddenly on the stretch, and keeping up the tension. This seems related especially to sclerosis of the lateral columns of the cord. When this spasm exists in considerable degree, it is excited by the standing posture, in consequence of the tension thereby placed on the gastrocnemii, and the heels are raised an inch or so from the floor at each contraction. The contractions occurring several times per second, the body is repeatedly jerked upwards a short distance, although with incomparably less force than in saltatoric spasm. The mechanism of this clonic spasm is not quite certain, but if, as many authorities have maintained, and experimental evidence suggests, it is reflex from the cord, part of the central mechanism may be involved in its production, which, when in a state of high overaction, is concerned in the production of saltatoric spasm.

A distant resemblance may be traced between saltatoric and some forms of choreal spasm. A girl, aged eleven years, who is now under my care in the Hospital for Paralysis and Epilepsy, on account of post-choreal spasmodic movements, presents an occasional spasm comparable to one of the single starts of the saltatoric form. Though no doubt of central origin, it is interest-

[1] Ludwig's Arbeiten, 1874, p. 308.

ing from its relation to reflex influences, and to emotion, especially in connection with the influence of emotion on the saltatoric spasm in one of Güttmann's cases, and in one of my own. The spasm consists of a sudden isolated contraction of the muscles of the legs and back, by which the heels are raised from the ground, and the trunk jerked upwards. It is observed more frequently when standing, but sometimes a similar spasm occurs when she is sitting. But it is most marked when she is descending a flight of stairs. A similar start occurs on every step. It seems increased by the emotion which many people feel on standing where a fall is possible. A day or two before admission, when standing near the edge of an open cellar, she gave a start so violent as to amount to an actual jump, in which she went over the edge and into the cellar.

Almost all the subjects of saltatoric spasm were suffering from physical or mental depression at the time of the onset of the symptoms. In the cases which occurred in females other manifestations of hysteria were slight. That the associations of the spasm with hysteria are not very close is evident from the conditions of origin of the cases which occurred in men. In the second case which I have recorded it may perhaps be compared with the spasmodic phenomena, trismus, etc., sometimes seen after an epileptic fit.

The treatment of the affection, so far as recorded cases go, must be confessed to be unsatisfactory in its results. It has had in most cases little apparent influence on the duration of the malady. In the second case I have recorded the arrest of the affection may perhaps have been due to the diaphoresis induced, and this may suggest the propriety of treating the disease by the diaphoretic method, which is of proved efficacy in some cases of chorea. But it is right to point out that the case was slight in degree, that it differed from others in following an epileptoid seizure, and that in at least one other case "baths" seem to have been employed without result.

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Experiments on Hay Fever.

At the suggestion of Professor Binz, Dr. G. F. Patton (*Virchow's Archiv*, lxix., S. 410) applied the pollen of *Festuca pratensis*, *Dachtylis glomerata*, and *Secale cereale*—grasses which flower in early summer—to the mucous membrane of the nose, to the conjunctiva, and to portions of scarified skin, without exciting anything more than temporary irritation. Hence, as far as these plants are concerned, the notion that their pollen is an exciting cause of hay fever may be probably abandoned. Patton recommends a solution of one part salicylic acid and three parts common salt in five hundred parts water as a local application in hay fever, in preference to quinine, which Helmholtz suggested, but which is very irritating to the mucous membrane.—*Med. Times and Gaz.*, Aug. 18, 1877.

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The Treatment of Pleuritic Effusions.

In a paper upon this subject read before the British Medical Association at its late meeting, Dr. T. Clifford Allbutt divided his subject into the following heads: 1. Dry pleurisies; 2. Inflammatory pleurisies with highly fibrinous exudations; 3. Quiet pleurisies with large serous effusion; 4. Empyema; 5. Pleural dropsy. 1. With dry pleurisies, of course, he had not to deal. 2. Acute fibrinous pleurisy is usually attended with moderate effusion, which ebbs when the flow is complete. He gave a full account of his treatment of these cases and of the hastening of the ebb of sluggish effusion. In some cases, the effusion becomes so excessive as to demand operative interference, but fortunately they do not, as a rule, tend easily to run to pus. The difficulty with them is the presence of fibrin which blocks the trocar. The aspirator is useful in these cases, and repeated punctures are better than fumbling at one opening. There is no need to empty the cavity, as absorption is generally set quickly going, and, except in cases of a low type, reaccumulation is not to be expected. 3. Quiet pleurisies with copious effusion generally need operation. If the chest be full, it should not be delayed an hour, as sudden death may occur at any mo-

ment, or, if on the right side, anasarca of the legs, etc If not quite filling the cavity, the presence of a large quantity of fluid soddens and spoils the lung, and tends to pus. In these cases, the aspirator is undesirable; it is better that the lung should expand quietly. The cavity need not be wholly emptied, as absorption often completes the cure. As there is in these cases a strong tendency to the formation of pus, the operation should be carried out on the antiseptic plan. Reaccumulation does not occur as a rule. 4. Empyema should be removed at once by free incision in a dependent part on the antiseptic plan, and antiseptic dressing kept up. Repeated aspiration is objectionable; it rather favours absorption, and does not prevent the formation of a pulmonary fistula. Moreover, it is impossible to say when a patient is cured, as remnants of pus may break out months or years afterwards, and may decompose *in situ*, or may set up tuberculosis. After operation, any increase of temperature is a mark of imperfect drainage or bad nursing. No method can make a vast internal abscess of the chest anything but a terrible malady. If a pulmonary or other fistula have formed, the counter-opening must, nevertheless, be made in the same way, and the chest drained. 5. Pleural dropsies, though dependent on disease elsewhere, may always be tapped readily if the symptoms be urgent. The tapping is as simple as the tapping of ascites, but must be more gradual, as pressure cannot be used. There is no probability of pus-transformation; but, if convenient, the tapping may be done under an antiseptic treatment.—*British Medical Journal*, Aug. 25, 1877.

Relations of Tuberculosis and Caseous Pneumonia.

The recent studies and demonstrations of M. CHARCOT at the Manchester meeting of the British Medical Association (of which we shall present a report from the pen of Dr. Dreschfeld) included the development of his views on the relation of tuberculosis to caseous pneumonia. On this subject, there is a great want of agreement among pathologists. M. Charcot has studied it very thoroughly in his lectures this year at the Faculty of Medicine, and lately gave a summary of his conclusions at the Société de Biologie.

Clinically, under the name of caseous pneumonia, pulmonary phthisis is designated a subacute inflammation of the lung, which has often the characters of a fluxion: it commences then with a pain in the side, fever, etc.; presents stethoscopic signs which need not be described here; and in two or three months an enormous destruction of the lung is produced. By some, these characters and the acute course of this affection are made to distinguish it from tuberculosis properly so called.

According to the doctrine of Lænnec, tuberculosis in the lung is manifested sometimes under the form of gray miliary granulations, sometimes in more or less voluminous yellow masses. That learned clinician thus attributed to the same process the miliary granulations and the caseous masses. In 1850 Reinhardt and Virchow substituted for the doctrine of the French physician the following formula: After pneumonia, broncho-pneumonia, etc., when resolution does not occur, the exudation accumulated in the bronchi and the alveoli degenerates, undergoes caseous transformation, and constitutes more or less voluminous masses. These play then the part of a foreign body determining a peripheral inflammation: then their centre breaks down and is eliminated, and a cavern is formed. In this case tubercle does not exist: it is only accessory. Caseous pneumonia is, in a word, for Virchow, only a degenerated pneumonia: it is not a tuberculous pneumonia.

By the kindness of his hospital colleagues, M. Charcot has been able to study the process in the lung from a great number of cases of caseous pneumonia. According as death is more or less rapid, the processes more or less generalized, there are found disseminated caseous *foci* of the size of a pea, of a small nut, or of a filbert, or confluent masses; sometimes even a lobe or an entire lung forms only a mass resembling a piece of Roquefort cheese. With the aid of his pathological assistants, he has successively studied all these varieties. In particular, in one case, which ran a very rapid course, he made a very minute examination of the mode of formation of the little disseminated caseous *foci*.

The patient has succumbed in fourteen days under a stroke of intercurrent diphtheria. It was thus possible to seize the pneumonic phthisis at the commencement of its evolution, which is rare; that is to say, before it had undergone its phases, and the masses had become confluent. In all these cases, he finds and can demonstrate, he believes, as the fundamental and exclusive *processus*, tubercle with all its characteristic attributes.

What is, in fact, tubercle according to Virchow and the most critical persons? The common tubercle, the gray macroscopic granulation, is only an agglomeration of many follicles or elementary tubercles. To understand the constitution of this pathological corpuscle, it must first be studied in the organs in which it shows itself in the most simple state, as in the fungosities of "white swelling," or in the tongue. In these fungosities are found little whitish masses smaller than a millet-seed.

Under the microscope, are observed: 1. In the centre one or more large cells, called giant cells (these are constituted by a protoplasmic mass relatively voluminous, having scattered nuclei in its periphery); 2. Peripherally, an agglomeration of embryonic cells, which are strongly coloured by reagents. When degeneration occurs, the large cells are the first to undergo the caseous transformation: the centre of the elementary granulation is no longer coloured by the carmine solution. In the tongue, it is agglomerated tubercles which are observed. One sees first many follicles or elementary tubercles, such as those which have just been described, develop separately in the little muscular bundles: they are placed in the little muscles, in the very centre of the myolemma, in the fibrous sheath, of which they gradually crowd back the contents. Then the follicles of neighbouring fascicules join, and together they form a veritable aggregation. They have then a common life: they are surrounded by a common zone—the embryonic fibrous zone

Caseous degeneration occurs first in the most central follicles. In the lung, almost always, the follicles or elementary tubercles are agglomerated. The gray granulations—those which are met, for example, in the lungs of children who have died of generalized tubercle—are already very complex masses. With the naked eye, or with the pocket-lens, it is easy to observe that the gray granulation is installed in the network of the lung; the alveolar walls are blended with it. It seems to be a sort of invasion of the tissue. From the microscopic point of view, the gray granulation is formed of numerous elementary tubercles or follicles, like those which M. Charcot describes in the fungosities of white swelling or in the tongue; that is to say, a centre formed of giant-cells and an embryonic periphery. When caseation occurs, these follicles are the first to undergo it. If one of these gray granulations be treated with caustic soda, the elastic framework of the lung reappears, and it thus may be recognized that the neoplasm occupies at once the alveoli and their walls. The framework of the lung is incorporated with it, and the elastic fibres remain.

Such is tubercle, the classic tubercular granulation. Thus far, the description agrees with that of Virchow. M. Charcot proceeds to show that caseous pneumonia is an exclusively tuberculous pneumonia; that is to say, that the caseous masses are enormous tuberculous conglomerations. He points out here that he has been preceded by distinguished histologists (who have recognized this nicety in phthisis) in France and in England. (He cites Grancher, Thaon, Renaud, and Wilson Fox.) He considers, however, that his predecessors have been too timid in their statements. He completes their thought and synthesises their description, by saying that tubercle is not recognized in caseous pneumonia because it is of such great size. It is formed of a multitude of associated elementary tubercles.

This he demonstrates as follows. Evidently it is not in a lung of which one lobe is completely caseous that we must seek for tubercle; it is in that stage of caseous pneumonia when it is still constituted of small disseminated masses. Subsequently, all the intermediate stages may be followed, from nodules of the size of a pea to total degeneration.

By the aid of a schema, which Professor Charcot gives in his *Lectures on the Histological Characters of the Lung*, it is always easy to find one's way over a preparation. With a very slight magnifying power, the intralobular

bronchi are rapidly and easily recognized, in that they are joined to an arteriole. That is more easy than guiding one's self by delicate particulars of their structure. In the case of pneumonic phthisis which he was able to examine on the fourteenth day, and which has been already mentioned, it was easy by this mode of examination to recognize that the lobular bronchus and arteriole were here and there surrounded in caseous islets; otherwise, under this slight enlargement, the lung appeared relatively sound.

Professor Charcot proceeds to study successively, by higher magnifying powers, the constitution of the "islets" and the changes of the part of the lung which surrounds them, and which he compares—to continue the image—to the intermediate sea. The islets present in the centre an arteriole and a bronchus more or less completely obliterated, and whose walls are more or less altered. They are surrounded by a yellow uniform mass, which does not become coloured by carmine. In this mass, soda reveals elastic fibres which outline the alveoli. The zone which surrounds the yellow mass, and which might be called "the riparian zone," becomes rose-coloured with carmine-solution; it is composed of embryonic cells. It is at the most external part of this riparian zone of the islets that the giant-cells may be observed here and there, disposed like detached forts on the coast, circulating and forming the advance-guard. There, each one of them is surrounded by a little special embryonic zonule. These giant-cells seem to be a centre of formation of elementary follicles, as a centre of crystallization would be in mineralogy. In a word, each of these islets is only an agglomeration of elementary tubercles; its growth takes place at the periphery by the formation and adjunction of elementary follicles, each with their central giant-cells. There is, therefore, the greatest analogy between these caseous masses and the gray tuberculous granulation. They are simply gray granulations united in mass. Now, the largest caseous masses, whether they have the size of a nut or occupy the whole of a lobe, are always constituted in the same manner. There are always to be found at their periphery the riparian zone of embryonic follicles and the giant-cells.

What has interfered with the conception and demonstration of the analysis of pulmonary tuberculosis and caseous pneumonia? According to Professor Charcot, it is the exclusive adoption of the idea of Virchow, that tubercle is a special neoplasm. The caseous masses, however, it has been already stated, have absolutely the same constitution as the gray granulation. The only difference lies in the size.

The attentive examination of what M. Charcot calls the intermediate sea—that is to say, of the pulmonary parenchyma around the islets—establishes yet more clearly the error of Virchow in alleging that caseous pneumonia is only a degenerated pneumonia. Indeed, in neighbouring alveoli, the most various lesions are found; epithelial catarrh, fibrinous exudations, purulent mucus. Now, these pathological products never undergo real caseous transformation. The epithelial cells, as everywhere else, become granulo-fatty, form granular bodies, etc.; crystals of fatty matter, etc., are found. Thus it is not exact that these elements form a magma, as Virchow had alleged. Histologists have, in the view of M. Charcot, put too blind a confidence in the words of the great pathologist, and have admitted, without serious examination, what was rather a conception of his mind than a complete anatomical description. We must, therefore, in this view, return to the theory of Lænnec—caseous pneumonia or pneumonic phthisis is of a tubercular nature; it is constituted by conglomerations of tubercles often very voluminous, or, if one prefer it, by gigantic tubercles.

M. Malassez partakes of the general views of M. Charcot on the analogy of caseous pneumonia and tuberculous pneumonia. But he thinks M. Charcot's elementary tubercle still too complicated. The giant-cells are an extraneous attribute of tubercle; they are not found in the tubercles of the great omentum. These are constituted solely by rounded or fusiform foci of embryonic cellules surrounding these connective bundles. In the second place, these giant-cells are not special to tubercle; they are also found in certain tumours, fibro-sarcomata, etc. They have intimate relations with the vascularization. M. Charcot recognized the fact, indeed, that the giant-cells are not essentially characteristic of tubercle; the researches of M. Malassez indicate that they

are in direct communication with the vessels. They are angio-plastic prolongations which become hypertrophied. This is also the opinion of Bradowski.—*British Med. Journal*, Sept. 1, 1877.

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Influence of Posture upon Cardiac Murmurs.

There is no doubt that the position of a patient has much to do with the comparative intensity of endocardial murmurs. It has been several times pointed out that a murmur audible when the patient is recumbent, is almost if not entirely lost in the erect posture. This effect of posture seems to tell more upon mitral than upon aortic bruits, but all cardiac murmurs seem more or less influenced by it. The subject has recently been studied by M. CUFFER, of Paris, who has come to the following conclusions: That all intracardial bruits, of whatever nature, are modified by the patient passing from the horizontal to the vertical position. That they are all diminished in intensity in the erect posture. That this diminution is partly due to change in the form of the heart, and partly to alterations in the arterial tension, by which the number and force of the cardiac contractions may be altered. Further, that all murmurs are intensified in the horizontal posture, some even being only produced under this condition. He adds that inspiration increases the intensity of a murmur.—*Lancet*, Aug. 4, 1877.

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Case of Cancer of the Stomach in an Infant Five Weeks Old.

Mr. C. J. CULLINGWORTH, of Manchester, at the late meeting of the British Medical Association (*Brit. Med. Journ.*, Aug. 25, 1877) exhibited the stomach of an infant who died from cancer of the pylorus at the age of five weeks. At birth, and for the first nine days of life, the child (a male) was to all appearance in good health. On the tenth day, he began to vomit, from half an hour to an hour after taking food. There was no pyrexia; the tongue was clean; the bowels constipated; and the motions dark and scanty, without any ill smell. All the usual signs of gastro-intestinal irritation were absent. It was feared, therefore, that the vomiting, which persisted in spite of all treatment, medicinal and dietetic, was due to an obstruction situated high up in the alimentary canal, though of what nature it was not easy to conjecture. The vomiting became more urgent, and the evacuation from the bowel more scanty. Emaciation increased from day to day. For many days, the abdomen remained natural, but eventually it became enlarged and tympanitic. At this time the vomiting took place at long intervals, and the vomited matters were large in quantity. Convulsions manifested themselves during the twenty-six hours preceding the child's death, which took place twenty-nine days from the first attack of vomiting. At the post-mortem examination, the stomach, dilated and hypertrophied, occupied almost the whole abdominal cavity. The right or pyloric half was greatly hypertrophied, the thickening gradually increasing towards the pyloric orifice. The wall of the pylorus itself measured one-third of an inch in thickness. A small pear-shaped tumour, one inch in length, sprang from the inner surface of the lower border of the pylorus. It was softened and ulcerated at its centre, and completely closed the pyloric orifice. The intestines were collapsed and empty. Dr. Dreschfeld had examined the specimen microscopically, and reported that the tumour was a cylinder-celled epithelioma, and that there was enormous hypertrophy of the muscular coat of the stomach in the neighbourhood. The specimen was laid on the table, and sections of the growth were exhibited under the microscope. The author remarked on the extreme rarity of malignant disease of the stomach in infancy, and referred to the only other case he had been able to find, viz., that of Dr. Thomas Williamson (*Monthly Journal of Medical Science*, 1841, p. 23).

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Treatment of Neurosis of the Stomach.

In the treatment of dysorexia, says Dr. H. LEBERT, in a Memoir on the Neurosis of the Stomach (*Archives Gén. de Méd.*, June, 1877), the regulation

of the diet is the essential point to be attended to. Whilst variety should be permitted, all indigestible and innutritious substances should be interdicted. In *bulimia* a little food may be given between the ordinary meals, as two or three biscuits soaked in sherry, and a cup of milk may be placed beside the bed at night, but no cooking should be allowed. Moral treatment, gentle but firm, is indispensable. In this condition M. Lebert has found opium or codeine in small doses, as one-sixth of a grain three or four times a day, most serviceable. Bromide of potassium is also useful in doses of five grains or more or a drachm of the syrup; the same treatment is adapted for heterophagy. Where these means fail and the patient continues to eat improper substances, small quantities of tartar emetic should be surreptitiously added to them, that a cure may be effected by the vomiting induced. *Geophagy* has become a more rare affection since the emancipation of slaves and the better food they have obtained, and it will, he thinks, disappear altogether. For its treatment repose, pure air, and a carefully augmented milk diet are all that is needed. A little rum or good wine may be added if the patient be much exhausted; more solid food may alternately be had recourse to, and tonics may then be given, beginning with infusions of centaury, orange peel, calumba, and quassia, and passing on to quinine and chalybeates. In *gastralgia* not only the diet but the whole hygiene of the patient must be attended to; milk and farinaceous food, eggs, stewed meats, fish, young and tender vegetable food may be given, but the use of tea, coffee, wine, and brandy, unless in very small quantity, should be stopped. Cacao deprived of its fat can in general be taken, as may also small amounts of aërated waters: indigestible substances, like legumes, fat meats, ham and pork, are as a rule very inappropriate. The exercise should be regular and moderate, and the advantage of moderation in amusements strongly impressed on the patient. Great benefit is sometimes derived from hydropathic treatment carried out with judgment. In regard to remedies, whilst none should be prescribed that are not absolutely necessary, it is expedient to have several resources against this frequently rebellious disease. We may commence with bismuth, small doses of nitrate of silver and bromide of potassium, and proceed to the preparation of zinc, to nux vomica, and arsenic. Bromide of potassium, which is not good in chronic catarrh of the stomach, is often very useful in pure gastralgia. The sulphate, or better still the lactate of iron, may be prescribed in doses of half to one grain several times a day. When the patient is troubled with eructations they may be temporarily prevented by the administration of from fifteen to thirty grains of the bicarbonate of soda, but it soon loses its effect. M. Lebert has not seen much advantage accrue from the use of valerian, castor, or the fetid gum resins, though occasionally a combination of tincture of valerian with benzoated tincture of opium has proved effective. In regard to local means the hydropathic compress, either cold or allowed to remain as a poultice, is most useful. Local faradization sometimes removes the pain, and in rebellious cases a large flying blister may be applied to the epigastrium, with or without the subsequent administration of morphia in powder. Vomiting in gastralgia is usually slight and transient, but it should be treated with ice internally and effervescent drinks; opiate injections and poultices, over which a little tincture of opium has been sprinkled, may also be used. If the attack have been brought on by some imprudence in diet, the patient should be directed to drink abundantly of chamomile tea, and a small dose of apomorphine be injected under the skin to promote vomiting.—*Practitioner*, Aug. 1877.

A Case of Psoriasis treated with Crysophanic Acid.

The following case, which was treated by Dr. BRADBURY, at Addenbrooke's Hospital, Cambridge, is interesting as showing the efficacy of chrysophanic acid in removing the rash of psoriasis after arsenic and mercury had been fairly tried and failed.

Clara W., æt. 8, a healthy looking child, was admitted into Hatton Ward on April 18, 1877, suffering from psoriasis.

The mother states that she has never had any miscarriages, that the rest of

the family are healthy, and that this child has had a "scurfy" eruption on the head since she was a baby. The present eruption first appeared just below the right knee about twelve months ago, and since then has shown itself in round patches on both cheeks, arms, and legs, and on the front of the abdomen. The elbows are free. Below the right knee is a large patch, but the corresponding point on the left knee is free.

She was ordered three minims of liquor arsenicalis in an ounce of water three times a day, after meals; an alkaline bran bath on alternate evenings, and the head to be cleansed daily with the yolk of an egg. This treatment was persevered in for the next six weeks, the dose of liquor arsenicalis being gradually increased to six minims. On April 30 an ointment composed of equal parts of ung. hydrargyri ammoniati and ung. creasoti was applied to the patch below the right knee, without producing any decided effect on the eruption, though the head had become nearly free from scales. On June 1 an ointment consisting of thirty grains of chrysophanic acid in an ounce of benzoated lard was applied on lint, first to the patch on the left cheek, and afterwards to those on the arms and legs. After a few days' application the scales disappeared, and generally in about a fortnight nothing was visible but a blanched patch where the eruption had been; in a month from the ointment being first applied the child was quite free from the disease.—*Med. Examiner*, July 19, 1877.

Surgery.

Recovery from Sarcoma.

Dr. S. ALMSTROM records in the *Upsala Läkareforenings Forehand*, vol. xii., No. 2, the case of a young man, twenty-two years of age, who presented himself at the hospital in Upsala with the following history:—

About six years previously he noticed a very small tumour behind the angle of the lower jaw. The tumour was hard, not sensitive, and was readily movable. Its growth was slow, and caused but little inconvenience. Within a year, when it had become as large as a hen's egg, it began to increase with greater rapidity, and the general condition of the patient became bad. Symptoms of hyperæmia of the brain supervened; he was often troubled with headache and delirium, and occasional syncope after severe exertion. There was loss of appetite and emaciation, especially during the previous two or three months.

On examination, a tumour, about the size of a man's fist, was seen on the right side of the neck, extending from the ear as far as the supra-clavicular fossa. The latter was quite firm, and its surface nodular; it was immovable, and apparently attached to the skin. Pressure caused but little pain. The external jugular vein, passing over the tumour, was considerably enlarged. The sterno-cleido-mastoid appeared to be included in the tumour. The right tonsil was displaced towards the median line, and very much swollen. No enlarged lymphatic glands were discovered. It was impossible to detect the point from which the tumour had its origin. The diagnosis of sarcoma was made, and an operation for its removal attempted. It was discovered, during the operation, that the attachments of the growth to the deeper parts were too extensive to admit of the successful completion of the operation, and it was therefore discontinued. A small portion only of the tumour was removed for microscopic examination. The wound was closed with sutures, and Lister's method employed. There was but little action, and the patient made a good recovery. The subsequent suppuration was very inconsiderable, and the tumour gradually decreased in size. Every day the circumference of the neck, measured over the tumour, decreased nearly half a centimetre. The general health of the patient improved, the appetite became good, the brain symptoms disap-

peared, and did not return even during severe bodily exertion. Six weeks after the operation, when the patient left the hospital, there was little trace of the tumour to be discovered. The right tonsil had resumed its normal position, and was much smaller. The movements of the jaw were free, and there was no difficulty in swallowing. The case, if one of true sarcoma, is a very rare one, and has considerable therapeutical importance.—*The Doctor*, Aug. 1, 1877.

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On the Etiology of Neuro-retinitis.

In the *Annales d'Oculistique*, Mars-Avril, 1877, there is an exhaustive paper by Drs. Warlomont and Duwez on the etiology of neuro-retinitis. After discussing the various theories at present offered as explanatory of its causation, the authors sum up as follows:—

1. We must admit two great classes of neuro-retinitis, which are almost always blended—descending neuro-retinitis, and neuro-retinitis by stasis.

2. The mechanism of their production may take place by continuity of tissue from the pia mater to the nerve, by migration, and by reflex irritation. In all probability it is to the last influence that the greatest value must be accorded. Irritation of the vaso-motors in reality modifies the activity of the regions to which they are distributed, whether by destroying it, as is shown by the symptoms, aphasia, anæmia, deafness, paralysis, cardiac syncope, stoppage of respiration, suspension of the changes between the tissues and the blood; or by exalting it and giving rise to certain morbid manifestations which may produce delirium, convulsions, and trophic disturbances. The theory of vaso-motor irritation explains the symptomatic variations met with in the same subject, and which are manifested on certain days, or even at certain hours of the day; the appearance of highly developed symptoms in limited lesions of the brain, their absence in extensive lesions, their disappearance whilst the cerebral affections remain unchanged. It explains why the lesions situated in the cerebellum, the hemispheres, and the base of the brain, may equally produce neuro-retinitis. If we have not recourse to this interpretation, how shall we explain the influence of intestinal worms upon the visual faculty? And if we are forced to admit that this influence is exercised by means of the vaso-motor nerves, why should we refuse to accept a similar mechanism in the production of neuro-retinitis? It compares the mechanism of the indirect symptomatology, due to a cerebral cause, with reflex symptoms due to irritation of peripheral nerves, such as those of the intestines, the lungs, and the skin. It also accounts more satisfactorily for the influence exercised by changes in the blood, by anæmia or toxæmia, whose effect consists in inducing an irritation which is propagated in exact imitation of cerebral maladies themselves.—*London Med. Record*, July 15, 1875.

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The Hypodermic Treatment of Bronchocele by Ergotine.

Dr. J. G. Sinclair Coghill, Phys. to the Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, in recording (*Lancet*, Aug. 4, 1877) the following case makes these remarks.

The therapeutic uses of secale cornutum are being rapidly extended from the comparatively humble and limited *rôle* to which, in obstetric practice, this drug was originally confined. Its marked influence on the contractile elements of the tissues of the vascular system has led to its being placed in the first rank of hæmostatic remedies. Again, indirectly, from its controlling power over the supply of materials through the circulation, its effect on the processes of nutrition furnishes indications for a much wider range of employment.

Mrs. J——, a lady in her forty-ninth year, came to Ventnor in June of last year to consult me about an enlargement of the thyroid gland, which occasioned her great and increasing physical distress. She had at various times been treated by the different preparations of iodine, both internally and locally, with no effect, and had quite recently gone to Edinburgh, where the removal

of the tumour by a surgical operation was urged as the only means of relief. She was a native of a district in the north of England where goitre is notoriously endemic, and, indeed, several members of her own and her husband's family have been similarly affected. but to a less degree fortunately. The enlargement of the gland, it seems, had been noticed as soon as menstruation was established, and she thought she had remarked a distinct increase of size in the tumour at each period, but also particularly during each of her three pregnancies. The menstrual flow has always been very profuse, and at intervals within three weeks.

When I first saw her the amount of exophthalmos was very striking. The bronchocele filled up the whole space between the chin and clavicles, being especially prominent below and on the right side. The tumour felt exceedingly hard and tense, and its weight caused additional distress to the patient. An exploration with the needle showed that it was not cystic, but fibro-vascular in character. The effect of the pressure of this mass on the trachea and œsophagus threatened to be most serious, and kept the patient in a state of great alarm. It was impossible for her to swallow any solid food except in the smallest morsels, and washed down with fluids. The slightest exertion brought on violent attacks of dyspnœa.

As the usual remedies had been tried in vain. and the patient had positively declined a surgical operation, I determined to endeavour to reduce the tumour by injecting a solution of ergotine hypodermically. This treatment of tumours was, I believe, first suggested by Prof. Hildebrandt, of Königsberg, and used successfully in a fibro-myoma of the uterus. He employed an injection of a watery solution of three grains of ergot in glycerine. I used in the present case the ergotine disks of Messrs. Savory and Moore, which are most convenient, and thoroughly reliable. In all sixteen injections were made over the tumour, and as closely in contact with its substance as possible. I commenced with one disk equal to one-third of a grain, and increased the amount gradually to three disks, equal to one grain of ergotine. They were simply dissolved in distilled water, and injected at blood heat. The first four injections were made daily, the next four at intervals of two days, and the others at long intervals, the whole extending over two months.

The results were soon apparent, and were most satisfactory. The tension and dense consistence of the tumour first of all diminished rapidly, with great relief to the dyspnœa and dysphagia. The whole mass became gradually reduced in size, until the left lobe, which had always been the least, returned to its natural size, while the right and middle lobes certainly returned to half at least of their former dimensions. It is to be noted that although the injections were at first and for the most part made over the right or larger side of the tumour, the left and central portions became much more rapidly and to a comparatively greater extent reduced in size. The nutrition of the entire body seems also to have been influenced to some extent by the remedy, for although the patient was by no means obese, she lost fourteen pounds in weight during the two months, but with no loss of strength or other deterioration of health. It is singular also that the menses did not appear for six weeks during the hypodermic treatment, thus missing one regular period, an irregularity never previously experienced by the patient, and when they did return, they were much less in quantity than usual, although large doses of the fluid extract of ergot had been previously given internally without producing any effect whatever on the discharge.

Although the patient was of an extremely nervous and irritable temperament, the general effects of the drug were at first very slight, but after a time there was observed, immediately after each injection, considerable vascular excitement, with flushing, pain, and throbbing in the head. I have since quite recently heard that there has been no return of the enlargement, and that the patient is otherwise keeping quite well.

We have undoubtedly in ergot, and its active principle, ergotine, a means of most powerfully affecting the vascular system and its contents. It is to be observed that, as a hæmostatic, its influence seems to be much more potent when introduced directly into the blood through the tissues hypodermically,

than when it enters indirectly into the system by the stomach. It is but reasonable that such should be the case, if the object be to bring the remedy and the tissues to be affected into the most complete and rapid contact. Certainly in hæmoptysis it is much more efficacious when used hypodermically than when administered by the stomach. It is more than probable that its chemical instability is such that it undergoes some change of composition in the process of digestion, which may entirely alter its character, or at least seriously deteriorate its therapeutic properties. It is only in this manner we can explain the marked difference in results between the two modes of administration in question.

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Atrophy of the Testes following Mumps.

M Lereboullet recently brought forward at the Société Médicale des Hôpitaux a "Contribution to the Study of Atrophy of the Testes and Hypertrophy of the Mammary Gland in consequence of certain kinds of Orchitis." His remarks were founded on a case, of which the following is a *résumé:* A young man, aged twenty-two, of robust health, well made, and possessed of all the characters, physical as well as physiological, of virility, was attacked with mumps. The disease seemed mild; at the commencement there was no febrile action and no complications. At the end of four days, although the parotid swelling had not disappeared, a double orchitis came on, so that within two days these glands were swollen to triple their normal size. The pain, however, was not great; *the epididymis was normal.* The disease evolved rather rapidly. When admitted into the Val-de-Grâce, the patient still presented peri-parotid swelling, and yet the atrophy of the testicle was well advanced. In about three weeks these glands were no larger than a haricôt bean. At the same time that the testes were undergoing this atrophy, and the sexual power and desire were disappearing, the mammary glands, which up to that time had been absolutely normal as for a young man of this age, began slowly but progressively to develop. But now, although there are no other external signs of femininism, yet one is distinctly struck by the development of the breasts; to the touch they are lobulated and hypertrophied, and do not at all feel like mere fat; they are increasing in size daily; the nipple undergoes erection after any excitation which is prolonged. There is an absence of beard, although the pubic hair continues. The penis has a normal development, but there is an absolute loss of the genetic sense. This case goes to show that an orchitis has supervened before the complete disappearance of the parotid troubles, and that it complicates a disease apparently mild in its type. This is not by any means an exceptional case or an exceptional complication. Many similar cases are recorded, especially in France. Some authors, and among them M. Juloux, believe that the atrophy, though it comes on slowly, nevertheless comes surely; and M. Laurens reported, out of thirty-two cases, sixteen of atrophy of the testes, and nine times impotence. M. Lereboullet, however, cannot accept these conclusions; he believes rather that the testicles may become modified, both as to volume and consistence, without there being any real progressive or persistent atrophy of these organs. He thinks that army surgeons, seeing the frequency of epidemics of this disease (mumps), would meet with more cases among old soldiers than they actually do, if the atrophy occurred at all frequently and persistently; and hence he concludes that the atrophy is only partial, and that it does not remain permanent. Atrophy of the testicles also occurs after traumatic orchitis as the result of excessive masturbation, and, though very rarely indeed, after gonorrhœal orchitis or syphilitic orchitis. But M. Reclus, in his thesis, "Du Tubercule du Testicule" (Delahaye, Paris. 1876), has shown that there are varieties of atrophy. Thus, in syphilitic orchitis, the testis atrophies very slowly; it is very hard, and often hypertrophied, in consequence of gummous deposits. Under the microscope it is seen that the lesion commences in the reticular tissue which surrounds the seminiferous tubercles; these then atrophy as the result of pressure, but very slowly. In the orchitis which follows mumps and masturbation the atrophy goes on with great rapidity, and the epididymis often remains intact. Under the microscope we find that the inter-

canalicular tissue is but little altered, while the tubercles, which are alone affected, present a notable hypertrophy of their internal coat, with atrophy of their epithelial lining, and disappearance of their lumen. Thus, then, we have to do with a parenchymatous as opposed to an interstitial sclerosis. We reserve for another occasion a consideration of the mammary development which accompanies the disease.—*Med. Times and Gazette*, Sept. 1, 1877.

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Fat-Embolism of the Pulmonary Arteries after Gunshot Wound.

Dr. ARTHUR BOETTCHER reports, in the *Dorpater Medicinishe Zeitschrift*, 1877, p. 326, the case of a student who, on the third day of a gunshot wound of the left knee that had resulted in acute traumatic inflammation of the joint, suddenly became collapsed and died within two hours. At the necropsy, made 24 hours after death, the only appearances of any import that were visible to the naked eye were an unusual abundance of subcutaneous fat, and hyperæmia and œdema of the lungs. On microscopic examination of these organs, however, the smaller vessels were found to contain, in addition to much blood, a considerable quantity of fluid fat in a free form. According to the author, as fluid fat cannot pass along the capillaries, plugging had taken place in this case of a portion of the pulmonary vascular system, and from this congestion and œdema of the remaining free portion had resulted. The blood contained in the cavities of the heart and in the left iliac veins was also on examination found to contain free fat, a material never found in the blood under usual conditions. It has been proved by clinical and pathological observations and by experiments that the presence of free fat in the blood is always a fatal condition, as it invariably causes plugging (fat-embolism) of the pulmonary vessels. This form of embolism occurs in most instances after comminution of bones rich in marrow and after wounds of soft parts that contain large deposits of adipose tissue. Dr. Boettcher believes that in his case the fat found in the iliac veins had been taken up from the wound in the knee-joint, and that this had been the source of the fatty embola in the lungs. There was an extensive infiltration of blood in the very fatty subcutaneous connective tissue in the region of the wounded joint, but there was no possibility of determining whether the oil contained in the femoral vein had been derived from this source. The report concludes with the following allusions to the chief points of interest in connection with this case: 1. The very acute course of the embolic affection. The patient died within two hours from the sudden commencement of the threatening symptoms. The case corresponds in this respect with the results of experiments in which fatty matter in large quantities has been injected into the vascular system of animals. 2. The considerable amount of oil found in the femoral vein. At the first sight, free drops of oil could be seen in abundance on the surface of the blood that had been carefully collected from this vessel. After the blood had been allowed to stand for a time in a glass vessel, a thick superjacent layer of free oil was formed, and presented a marked contrast to the column of red fluid below. The blood taken from the cavities of the heart did not contain so much oil, but still large drops could be seen floating on its surface. 3. The disproportion existing between the quantity of oil contained in the blood and the extent of the lesion in the left knee. In the head of the tibia was a depression about eight millimetres in depth, and about this could be seen some hemorrhagic infiltration of the medulla. Whether this lesion of the tibia alone could account for the setting free of so much fatty matter as was found in the femoral vein, and whether the fatty embola observed in the lungs could have been derived from this source, must remain doubtful. It is possible that the injury to the thick subcutaneous layer of adipose tissue may have taken some share in the development of the morbid condition of the blood. 4. On microscopic examination of the lung-tissues the capillaries were found to be filled with more or less elongated globules of oil. Many of the larger vessels also contained similar material; the lumen, however, of each of these was not completely plugged, but presented merely a hollow cylinder of oil. The small vessels in those portions of the lung that were very hyperæmic and œdematous

were much distended with blood, but presented no oil-globules. Along the anterior margin of each organ, where there was no congestion, large and numerous branching cylinders of oil were found in the vessels of the pale parenchyma.—*London Med. Record*, June 15, 1877.

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Resection of Infra-orbital Nerve.

At a late meeting of the *Société de Chirurgie* of Paris (*La France Médicale*, June 16), M. Tillaux reported a case of resection of the infra-orbital nerve in the canal of the same name. The patient, a servant, thirty-one years of age, had suffered for eleven years from facial neuralgia, and from purulent discharge from the antrum. A free opening had been made into the antrum and drainage secured; injections of iodine, and cauterization of the interior of the antrum with nitrate of silver, chromic acid, and the hot iron, had been tried in turn, but these and all other methods of treatment had secured only temporary improvement. The pains were exceedingly severe, and started from the infra-orbital foramen, extending into the globe of the eye. The side of the face was excessively tender. Resection of the nerve having been decided on as a last resort, M. Tillaux made a horizontal incision analogous to that recommended by Nélaton for disarticulation of the upper jaw, and then a vertical incision terminating at the ala of the nose. The nerve was exposed at its exit from the canal, and was surrounded by a ligature, and the branches given off from it were dissected out for some distance. The periosteum of the floor of the orbit was then stripped from the bone and the globe of the eye raised up in a coffee-spoon. The nerve could now be seen in its canal through the transparent bone; it was laid bare by the aid of a chisel, and was divided deep in the orbit by a pair of curved scissors. By drawing on the thread previously applied, the entire nerve was removed. It appeared a little large, but microscopical examination showed it to be normal in structure. After removing the nerve, an opening was made into the anterior wall of the antrum Highmori, and on introducing his finger M. Tillaux found osteophytes on the superior wall. The floor of the orbit presented no lesion. The operation was performed on May 1, and eleven days later the patient was able to return to her home completely cured. Since then she had not complained of any pain at all.—*Med. Record*, Aug. 18, 1877.

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Nerve-Stretching.

The operation of nerve-stretching adopted in England by Callender for the relief of neuralgia, and on the Continent by Billroth, Nassbaum, and others, in cases of "reflex epilepsy," has recently received further attention. Four cases are given in abstract in the last number of M. Hayem's *Revue des Sciences Médicales* (p. 285), and are worthy of reproduction. Two were cases of neuralgia, following cicatrization of wounds. The first recorded was a patient of Paul Vogt's, who had wounded the inner aspect of her right forearm by falling upon a cutting instrument. After the wound had healed, there was much impaired movement of the ring and little fingers, attributed to involvement of the flexor tendons in the cicatrix; and at the same time the seat of the scar was exquisitely sensitive, especially at one point, which, on being touched, gave rise to acute pain, radiating into the fingers named. Every movement of the hand was painful; and at first the pain was thought to be due to the presence of a foreign body in the wound. An exploratory incision failed, however, in discovering any such cause for the irritation of the nerve, and the patient's condition remained much the same, until, about a year after, Paul Vogt dissected out the ulnar nerve from the cicatricial tissue surrounding it, and, raising it out of its bed, practised stretching of the nerve in both directions. The operation was immediately followed by the disappearance of the neuralgia, and in a few weeks the movements of the hand and fingers were re-established. There was no recurrence of the symptoms three years after the operation. The second case is related by Petersen, in which an extensive

wound of the upper and inner part of the left leg was followed, on healing, by very severe attacks of deep seated pain, again suggestive of the presence of some undetected fragment of metal with which the wound was inflicted. In this case also no foreign body was found on cutting down upon the injured limb; but Petersen ascertained that the posterior tibial nerve was very sensitive, and that there was some extravasated blood in its sheath. Stretching was practised, and with the same fortunate result as in Vogt's case. Two other cases are recorded, both of tetanus. One was a patient of Paul Vogt's, a man sixty-three years of age, who was attacked by tetanus thirteen days after suffering a contused wound of the palm of the right hand. Large doses of opium gave no relief. The scar in the hand was not painful, nor was there any tenderness over the course of the nerves of the arm and forearm, but in the neck the region of the brachial plexus was very tender, and compression in this part induced tetanic spasms. Vogt decided to try the effects of stretching the nerves of the plexus, and with the most happy result. The nerves were exposed in the posterior triangle by an incision along the anterior border of the trapezius three fingers' breadths above the clavicle, and their sheath, which appeared inflamed, being laid freely open, each nerve was raised and forcibly stretched. The symptoms of tetanus subsided, and the case terminated in complete cure. The other case was not so successful. The patient, a man forty-five years of age, was attacked with tetanus after impaction of a splinter beneath the toe-nail and exposure to cold. On the eighth day, after abortive treatment by chloral, the surgeon, Kocher, proceeded to stretch the posterior tibial nerve behind the malleolus and also the popliteal nerve. The former appeared much injected and thickened, but the popliteal seemed normal. Some diminution in the symptoms followed for a short time, but the patient soon succumbed. The sciatic nerve exhibited several points of injection. Vogt, in his comments, states that Valentin has found that the nerves do not undergo any histological changes after stretching, and adds that Tutschek, in experiments on decapitated frogs, has found that a slight amount of stretching increases, while forcible stretching diminishes, the reflex irritability of the nerves.—*Lancet*, Sept. 1, 1877.

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Spontaneous Fracture in Locomotor Ataxy.

In a recent number of *Le Progrès Medical*, M. Oulmont, *interne* to Prof. Charcot at La Salpétrière, records a remarkable instance of spontaneous fracture of bones in an ataxic patient. The peculiar affection of the joints, which is now so well known to occur in many cases of locomotor ataxy, chiefly through the writings of M. Charcot, has been shown to depend mainly upon a simple atrophy of the articular ends of the bones. It is not unreasonable to suppose that the same atrophic process may take place in the shafts of the long bones, but this is an event of rarity as compared with the "arthropathies." Both, however, depend on the same cause—namely, lesion of the nutritive centres of the joints and bones in the spinal cord, which centres are seated probably in the anterior gray cornua. M. Charcot believes that examples of atrophy in the continuity of bones have been before described (notably by Gurlt), but have been wrongly interpreted. The patient, whose case M. Oulmont now details, is at present in La Salpétrière. She is an old woman, seventy-five years of age, in whom the characteristic ataxic pains commenced as long ago as 1847, chiefly in the lower limbs and in the dorsal spine. For a long time these pains, which in 1848 attacked the upper limbs, and in 1852 were associated with swelling of the right wrist, were unaccompanied by any disorder of movement; nor were there any oculo-motor-phenomena, which, it will be remembered, were so prominently described by Duchenne as among the earliest prodromata of the ataxic phenomena. In 1871, however, the patient began to experience a sense of fatigue and weakness in the legs, especially the right; and in 1872 became confined to bed. At this time, the left hip-joint became swollen, crepitation could be felt in it, and there was distinct shortening of the limb. In the present year her condition was, and is (with the exception of the fracture described), much the same. She was bedridden, had a dorsal

decubitus, inclined to the right; movements to the left producing pain. There was marked constipation. There was no strabismus, and no impairment of special or general sensibility of the face. There was still much pain in the upper limbs; but no weakness nor ataxy in them, even when the eyes were closed; nor was there any anæsthesia. A soft, rounded, indolent swelling occupied the lower end of the right radius, without impairing the movements of the wrist, and no crepitation could be felt on passive motion. As to the lower limbs, she was unable to move the left, even horizontally. Passive motion produced acute pain, and marked crepitation could be heard in the hip, which was swollen, so that it was nearly half as large again as the right joint. There was shortening to the extent of from three to four centimetres. There was no inco-ordination of movement of the right lower limb, but great weakness. Sensibility was good except in the soles of the feet, where it was slightly impaired. In the month of May the patient experienced severe pains in the left leg, lasting almost continuously for eight days. On the 29th she was carried to the next bed for the purpose of having her own bed made. Nothing was noticed then, but the following day a diffuse tender swelling appeared on the anterior part of the lower third of the left leg, the skin over the part being reddened and œdematous. On May 31st both bones of the leg were observed to be fractured at the junction of the middle and lower thirds, the limb forming an angle with its apex directed inwards, whilst the shortening had reached seven centimetres. The patient was not aware of the fracture, which was followed by a rapid diminution of the periostitic signs and disappearance of the pains. On June 13th, when stretching out her left hand behind her head, to reach her ear-trumpet, without moving her body, she felt something give way, and at once lost power in the arm. The humerus was found to have been fractured in its lower third. Here, as in the leg, the fracture had been preceded by severe pains lasting for days and extending from the shoulder to the elbow, and also by diffuse œdema, which, with the pains, passed off after the fracture had occurred.

M. Oulmont remarks that none of the ordinary causes of spontaneous fracture were present in this case. It could not be attributed to syphilis, gout, cancer, or mollities ossium. Nor would disuse explain the fragility of the bones; since the arm, at any rate, was well exercised. It depended, then, upon the spinal lesion. He asks whether the pain, and the evidence of osteo-periostitis which preceded the fracture and disappeared after its occurrence, would be explained upon the hypothesis of their being stages, as it were, in the trophic disorder due to the lesion of the spinal nervous centres, and culminating in the fracture of the bones.—*Lancet*, Aug. 18, 1877.

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Subscapular Friction.

Terrillon adds (*Centralb. f. Chir.* No. 5, 1877) three new cases to the nine observations which formed the basis of his work on Subscapular Friction, and the formation of an adventitious bursa beneath the scapula; so that with those of Gaujot, Boinet, Demarquay, and Galvagni, eighteen cases of this peculiar affection have already been described. The three patients, of whom one was a pastry-cook, and two Parisian physicians, exhibited the following symptoms in common: Rough (*harte*) crepitation under the scapula, which occurred when the parts were moved, after the scapula had been drawn towards the middle line by muscular action, and pressed against the thorax; depression of the shoulders when at rest; prominence of the median border of the scapula, and a certain weakness in raising the arm. The usual seat of crepitation is in the neighbourhood of the lower angle of the scapula; but it has likewise been observed higher up near the spine of the scapula, and below its upper angle (Gaujot). Terrillon supposes that the following causes may produce the crepitation: (1) Abnormal curvature of, or processes from the ribs and scapula, by a sort of wear-and-tear (*usur*). This may induce perforation of the subscapularis and serratus magnus, and thereby bring bones into actual contact. (2) Primary atrophy of the subscapular muscles, *e.g.*, in phthisis. (3) Complete

or incomplete anchylosis of the shoulder-joint, which causes an increase of scapular movement, and more or less pronounced muscular atrophy. This he considers the most frequent cause of the phenomenon. Granting, however, the correctness of Terrillon's hypotheses, there remain a number of cases which cannot be classed under these three heads. Other explanations must therefore be sought for. Ledentu points out that, according to Cruveilhier, the uppermost segment of the serratus magnus, which is inserted into the anterior surface of the upper angle of the scapula, is distinctly separated from the three following slips by a layer of cellular tissue, as also is the fourth digitation from the rest of the muscle. Now, both these gaps exist precisely where, as a rule, crepitation is most evident. A congenitally abnormal breadth of these, or even an unusual thinness of the central portion of the muscle, without true atrophy, may explain how, without a specially demonstrable cause, the bones may rub upon one another; how this friction may produce a circumscribed muscular atrophy, not to be detected by the electric current, and how certain movements which favour friction may very easily cause pain and weakness of the upper extremity; likewise, why an orthopædic apparatus which draws the scapula away from the thorax removes all these troublesome symptoms, and finally, why faradization in such cases fails completely to alleviate.—*Edinburgh Med. Journal*, July, 1877.

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Primary Osteo-Sarcoma of the Femur; Amputation of the Thigh; No Return in Stump; Rapid Recurrence in the Lung; Death.

At the recent meeting of the British Medical Association Mr. F. A. Heath, of Manchester, related (*British Med. Journ.*, August 25, 1877) a case, which occurred in his own practice, as supporting a view expressed by Sir William Fergusson and held by himself, viz., that large malignant growths springing from the long bones do not, after amputation, if the whole of the diseased structures be removed, return in the stump, but at some distant part; and that, therefore, it is not necessary to amputate above the knee in the case of the tibia, or at the hip-joint in the case of the femur being the seat of the primary growth. The author afterwards referred to another case, formerly under his care, in which he had amputated at the hip-joint for a very large tumour of the thigh of a similar nature to the above. The man recovered from the operation, but subsequently died from recurrence of the disease in the viscera without any return in the stump. Dr. George H. B. Macleod (Glasgow) had operated for similar tumours, and with similar results. In three cases in which he had removed the limb at the hip-joint, the disease recurred in internal organs, and in one the lung alone was affected. He was of opinion that, while it was necessary to operate wide of the disease, no extra security against recurrence was afforded by amputating through a joint. Mr. T. Pridgin Teale (Leeds) supported the view expressed by the author, and alluded to a case in his own practice of a boy who died of recurrence of the disease in the lung three months after operation. Mr. O. Pemberton (Birmingham) opposed amputation at the joint, for the reason that, in osteo-sarcoma and osteoid cancer, recurrence takes place in the internal organs, whether the limb is removed in the continuity of the bone or at a joint. He considered that general experience points to sparing the patient the increased risk of amputating at the joint, while at the same time care must be taken to go wide of the disease. Mr. Birkett (London) expressed a corroborating opinion, and referred to two cases then in his memory in which the disease recurred internally and away from the stump. One was an osteoid cancer of the forearm, in which amputation was performed above the elbow, and the recurrence was in the lung. The other was a malignant growth in the fibula of a child, following a blow. Without any return in the extremity, the little patient died of cancer at the base of the skull in the sphenoid bone. He thought that, whether the amputation be performed through a joint or not, death sooner or later follows from a return of the disease in some distant organ.

Operation for Knock-knee.

At a late meeting of the Medico-Chirurgical Society of Edinburgh (*Edin. Med. Journal*, Sept. 1877), Mr. JOHN CHIENE showed a boy on whom he had operated for knock-knee. Previous to the operation, such was his difficulty in progression, that it took him two hours to walk from Grove Street to Ainslie Place. Now, as they could see, the legs were practically straight. He had operated on the right leg first, and therefore the result was not quite so good as in the left one. Meyer and others had shown that the real defect in knock-knee is elongation of the internal condyle of the femur. He did not, however, wish them to pin their faith to this, as, perhaps, the external condyle was deficient. At any rate, the practical result was that the tibia was thrown out of its proper axis. Dr. Ogston, of Aberdeen, had narrated cases[1] where he operated by sawing across the external condyle into the knee-joint, and then forcing the fragment up by restoring the tibia to its proper axis. Mr. Chiene, however, was afraid that, by this plan, he might interfere with the crucial ligaments; and he had accordingly operated in the following manner: Taking the tubercle into which the tendon of the adductor magnus is inserted as a guide, a vertical incision is made through skin and fascia, then, on drawing aside these, the oblique fibres of the vastus internus can be seen in front and the periosteum exposed. The internal articular artery is next secured by a double ligature and divided. Lastly, the periosteum is raised up and a wedge-shaped piece of bone is cut by chisel and mallet out of the substance of the internal condyle. By gentle pressure the leg is brought to its normal axis. The knee-joint is not opened into. In both legs the wounds healed in a fortnight, but splints were kept on for two months. This case and that of a little girl, in whom the result was even better, were the first in which a wedge-shaped piece of bone had been removed from the condyle of the femur without implicating the joint. He had feared that the neck of bone might break, but he had not found this to be the case in children. He hoped that the surgeons present would be induced to try the plan he had described.

Midwifery and Gynæcology.

On Twin-Birth in a Bipartite Uterus.

In the *Med.-Chir. Centralblatt* (No. 11), Dr. SCHEIDL relates the following case. In January, 1872, he was called to a primipara. The abdomen was unusually distended, and presented an abnormal shape. On placing the patient on her back, a marked prominence was seen on the left side, which was diagnosed as a second fœtus. It seemed as if this second fœtus were lying in the peritoneal cavity, and not in the uterus. The head presented, and was delivered by the forceps. It was a male child; the placenta did not follow, but, as the hemorrage was inconsiderable, Dr. Scheidl allowed things to take their course. At the end of twenty-four hours there was considerable hemorrhage, and he delivered her of the second child, a female, the foot presenting. On passing his hand into the uterus to detach and remove the placenta, he found the vagina to be normal, but the uterus to be divided into two distinct cavities; the right one perpendicular, the left cavity lying horizontally towards the left. The patient has since again become pregnant, and has been delivered of a female child, without any artificial assistance.—*London Med. Record*, July 15, 1877.

[1] Edinb. Med. Journal for March, p. 782.

Notes of a Case of Extra-Uterine Fœtation.

Mr. RICHARD D. PURREFOY presented to the Obstetrical Society of Dublin (*Obstetrical Journal of Great Britain*, Aug. 1877) the following brief notes of a case which recently came under his observation. He said: I am indebted to my friend and late colleague, Dr. Macan, for the early history of the patient, which is as follows: In March, 1873, the patient, a strong, healthy, married woman, who had previously enjoyed good health and regular menstruation, believed herself to be pregnant, as menstruation ceased and abdominal enlargement ensued, which, however, was most marked on the left side. Early in May, and again in June, two severe attacks of pain were experienced, passing down the back of the thigh, in the track of the sciatic nerve. Early in August a third attack of pain took place, and lasted for three weeks, very intense in character, attended with much bearing down, constant yellow discharge per vaginam, frequent micturition, and constipation. During the two months preceding this, marked enlargement of the tumour had taken place, but, at the same time, the patient had lost flesh, and suffered much from thirst and swelling of the feet.

Shortly after this third attack, just described, and about five months from the date of the last menstruation, a vaginal examination was made, when the uterus was found to be very low in the pelvis, the os large, and the cervix somewhat shortened, and in the posterior *cul-de-sac* a firmly fixed tumour, about the size of a child's head. The sound passed into the uterus to the depth of five and a half inches, and could be felt through the abdominal walls above the pubis. The abdomen was swollen, and the left hypogastric region occupied by a hard, movable tumour, which reached an inch above the umbilicus, and seemed to be connected with the uterus, though it lay quite to the left of the sound, when in the uterine cavity. At this time the vaginal discharge had ceased, and the patient complained only of severe pain in the side, until the following November, when an attack simulating diarrhœa came on, and at the same time fœtal bones, of which I have obtained one, began to escape per vaginam, and this continued for more than a year. At the present date—that is, nearly four years from the occurrence just described—the patient enjoys excellent health, and the only local evidence of what she has undergone is a small cicatrix in the vagina, at the left side of the cervix, and some lateral deflexion of the uterus to the same side. Since observations on the lower animals and on man have demonstrated the presence of spermatozoa on the ovaries and in the whole pelvic portion of the abdominal cavity, we must admit the possibility of extra-uterine fœtation; and considering the numerous circumstances, which, singly or combined, may interfere with the normal passage of the ovum into the uterus, we may rather be surprised that cases of it are so rare. For instance, when the serum drains slowly away from a small opening in the Graafian follicle, the ovum may remain behind, and be fecundated there—or the follicle may rupture at a spot distant from the end of the tube, or an abnormal movement of the intestines may drive the ovum from its right course. Again, occlusion of the tube, or destruction of its cilia, may have been caused by catarrh, while an attack of perimetritis is frequently followed by a flexure or constriction of a tube which greatly impedes conception. Clinical observation has shown that a large number of extra-uterine pregnancies occurred in primaparæ, who had lived for years in sterile marriage, and in many pluriparæ after a long pause in child-bearing.

I propose to make a few brief remarks on the course and termination of the three principal forms of extra-uterine pregnancy, viz., tubal, ovarian, and abdominal, in the order in which I have named them.

Examples of tubal pregnancy occur when the ovum is arrested in the Fallopian tube, from some of the diseased conditions just mentioned and sometimes from the presence of a polypus at the uterine extremity of the tube, as in Beck's case; or, as in the very rare case mentioned by Hüssfinther, an ovum which has normally entered the uterine cavity may pass thence into a Fallopian tube, and there develop.

Coincident with the development of the ovum, changes in the tubal mucous

membrane take place, analogous to, or, according to Schrœder, identical with those observed in the uterine mucous membrane in normal gestation, though Playfair denies that any decidua reflexa is formed.

Mr. Holmes, in vol. xliii. of *Medico Chirurgical Transactions*, gives an account of a dissection of a recent case of tubal pregnancy, in which he found a third membrane surrounding the ovum, distinct from the chorion and amnion, separable into two layers, and not forming part of the wall of the tube. The distension of the tube, due to the growth of the ovum, generally obliterates both its extremities, particularly that corresponding to the uterus, and its muscular fibres are so forced apart that the fœtal sac consists only of peritoneum and tubal mucous membrane.

At the same time important changes take place in the uterus. The whole organ hypertrophies, and its mucous membrane is converted into a true decidua. Its occasional absence at post-mortem examinations is probably due to the fact that it is sometimes thrown off *en masse* during the hemorrhages which often precede the fatal issue of such cases. The most frequent termination of tubal pregnancy is in rupture of the sac before the fifth month, generally at its thinnest part, but sometimes at the placental insertion; and death mostly follows either from profuse internal hemorrhage at the time, or from the consequent peritonitis. However, after its escape into the abdominal cavity the ovum may be encapsuled, and if at an early period of development it may, to a great extent, be reabsorbed; or, if the embryo be older, it may undergo the changes which will be mentioned when speaking of abdominal pregnancy. Occasionally, as in the cases recorded in *The Lancet* of 1861, and *British Medical Journal* of 1859, tubal pregnancy may be prolonged nearly to full term. Mr. Hutchinson, in 1873, recorded a case of what proved to be Fallopian gestation, prolonged to full term, and simulating ovarian dropsy so closely that the abdominal tumour was punctured, unfortunately with a fatal result. Undoubtedly the most favourable termination of tubal pregnancy is when the embryo perishes early, and recovery ensues without any rupture. Various measures have been taken to secure this end, which will be mentioned when speaking of treatment. With regard to diagnosis, Schrœder has well said that it is generally easy in the first months to make sure of an extra-uterine tumour, while the diagnosis of a pregnancy is frequently involved in difficulty; at a later period pregnancy can easily be diagnosed, but to show that the fœtus is outside the uterus may be very difficult. In the first place, it is to be observed that all the usual sympathetic disturbances of pregnancy exist—the breasts enlarge, the areolæ darken, and morning sickness is present. Menstruation is generally arrested, but there are often irregular hemorrhages, especially before rupture takes place. Barnes attributes these to partial detachment of the chorion villi, produced by the ovum growing out of proportion to the tube in which it is contained, and that they are thus exactly similar in their mode of occurrence to the hemorrhages which occur in cases of placenta prævia in the early months. If, under these circumstances, a careful bi-manual examination reveals the presence of an elastic, sensitive tumour on one side of the uterus, and that the latter is moderately enlarged, the case is probably one of extra-uterine pregnancy; the use of the uterine sound in very skilful hands may demonstrate that the uterus is empty, and this will also help us. We may be quite certain if hard and movable parts can be felt in the extra-uterine tumour, and if the fluid obtained from it by puncture have the usual characters of liquor amnii.[1] When by these various means of examination a satisfactory

[1] Dr. Barnes says three conditions may render diagnosis difficult—retroversion of the gravid womb, small ovarian cyst, and retro-uterine hæmatocele. The first and third of these conditions will commonly cause retention of urine, which is not common in tubal gestation. In the first there is almost always a history of pregnancy and the signs of it. In the third there also may be a history of pregnancy. Retroversion may be distinguished by tracing the rounded body of the uterus by rectal and vaginal touch. In hæmatocele the effusion of blood follows severe symptoms suddenly produced, and the uterus is much less developed than in tubal pregnancy. A small ovarian cyst may cause retention of urine, but seldom interferes with menstruation.

diagnosis can be arrived at, and the sac is accessible from the vagina, rectum, or abdominal walls, we are justified in puncturing it with a fine trocar, allowing the liquor amnii to drain off, and this can generally be done most readily through the vagina. The fœtus then dies, and, according to the time of its development, is either reabsorbed or converted into a lithopædion. Dr. Bachetti has successfully used the continuous current to obtain the same result. Recently Dr. Thomas, of New York, opened the cyst through the vagina by a platinum knife, heated by a galvano-caustic battery, and, through the opening thus obtained, removed the fœtus. In attempting the removal of the placenta violent hemorrhage ensued, requiring the use of an astringent injection to stop it; the patient made a good recovery.

More frequently our aid is sought when rupture has taken place, and our efforts must then be directed to stop the hemorrhage, a matter of no little difficulty. Ice applied to the abdomen, and, if possible, compression of the abdominal aorta, are the most efficacious means. If assistance be at hand immediately after the rupture, and if the ovum be of large size, perhaps the most successful treatment would be the Cæsarean section in order to stop the hemorrhage, remove the fœtus, and, if possible, the whole sac which contains it. It is supposed by Bernutz, and his opinion is shared by Barnes, that rupture which does not prove fatal is probably not very rare in the first few days of extra-uterine gestation, and that it is not an uncommon cause of certain forms of pelvic hæmatocele. I had recently under my care a young unmarried woman suffering from uterine hemorrhage, which followed some unusual exertions. The local signs of pelvic hæmatocele were present, and also such mammary development as strongly suggested pregnancy.

A variety of tubal gestation known as tubo-uterine, or interstitial, presents some points of difference from the form just described. Here the ovum develops in a portion of the tube already continuous with the uterine substance. In most such cases rupture occurs during the first three months. After rupture of the tubal mucous membrane the ovum may remain between the separated muscular fibres of the uterus, and gradually stretching the peritoneum, as it enlarges, may continue to develop up to the normal end of pregnancy.

I may illustrate this fact by the following case, recorded by Schultze in 1863: A healthy primipara menstruated last in June, 1862. Labour began on March 30, 1863. On the following day she died of convulsions, and the Cæsarean section was performed ten minutes after death. The child was dead, presenting in the first position, and its right foot protruded through an aperture in the right segment of the fundus. The peritoneal insertion of the right tube in the uterus was close to the edge of the uterine rent; and the seat of the rupture showed a defective muscular coat, forming a pouch, as if out of a dilatation of the uterine end of the tube. In the same year Breslau recorded the case of a healthy woman, aged thirty, who six months after marriage was suddenly attacked, without any evident cause, with symptoms of abdominal hemorrhage, followed by death in about six hours.

Post-mortem.—An extensive effusion of blood was found in the abdominal cavity, and at the point of opening of the left tube into the uterus, half belonging to the uterine parenchyma and half to the tube, was a ruptured sac, containing coagulated blood, mixed with chorion villi. From the size of the sac the pregnancy could not have reached more than the seventh week. A mucous polypus was found just below the uterine orifice of the tube, and very probably obstructed the passage of the ovum into the uterus.

In the Obstetrical Transactions for the year 1867, Braxton Hicks describes a case of interstitial pregnancy, which for some time enlarged equally towards the peritoneal and uterine cavities, but finally burst into the latter, permitting the escape of the fœtus, and simulating an ordinary abortion; the sac then compressing, the placenta still retained in it, a large vein just beneath the peritoneum burst and produced fatal hemorrhage. The difference between interstitial and simple tubal pregnancy can be shown in the dead body by the relation which the round ligament bears to the sac containing the fœtus. In the interstitial form the ligament passes external to the sac, and in simple tubal pregnancy between the sac and the uterus. A distinction between this and gesta-

tion in a perfect or rudimentary horn of the uterus offers great difficulties, since the relation of the round ligament to the sac of the fœtus is the same in both, and the thickness of the septum between the sac and the uterus proper differs only in degree, though it is generally less in the interstitial form. Ovario-tubal pregnancy occurs when the ovary and tube both take part in the formation of the fœtal sac.

Dr. Hayden, of London, in the year 1862, brought before the Obstetrical Society the case of a young woman who died after a few hours' illness from rupture of the sac of a tubal gestation; the post-mortem examination, by Dr. Smith and Dr. Hicks, showed that, some time before, the patient had conceived extra-uterine, the fœtus being attached to the fimbriated extremity of the Fallopian tube in such a way as not to prevent conception, that the fœtus died about the second month of pregnancy, still inclosed in its ovular structures; that at a later period she again conceived extra-uterine, but the ovum now descended to the middle of the tube, where it became arrested, lived about three months, and then died; three months after which the sac burst and death ensued.

A case remarkably similar in many particulars to this was recorded some years ago by Mr. Tuffnell. A patient in the fourth month of pregnancy was seized after a long walk with violent abdominal pain and prostration, followed by death in twenty-four hours. At the post-mortem examination the abdomen was found to contain a large quantity of fluid blood, in which a fœtus one inch in length was floating; a rent in the right tube disclosed a cyst from which the fœtus had escaped. In the uterus was found a healthy male fœtus proportionate to the date of conception.

When the fecundated ovum remains and becomes developed in the ovary, we have ovarian pregnancy, but this occurs so rarely that there are few well-authenticated cases on record, and the diagnosis of it during life may be quite impossible.

Hecker, in 1859, collected statistics of 222 cases of extra-uterine gestation illustrating the tubal, interstitial, and abdominal varieties, at the same time expressing the opinion that the existence of ovarian pregnancy still wanted proof.

There is, however, in the museum of Olmutz a preparation of a fœtal sac, in the walls of which microscopic examination reveals the presence of ovarian stroma. Dr. Davis records a case where the fœtus was found in a cyst developed from the ovary, and situated between the uterus and rectum.

In abdominal pregnancy the fecundated ovum develops in the abdominal cavity. An inflammatory new formation of very vascular connective tissue envelops the ovum in a sac, which, capable of great distension, may equal in size a gravid uterus at term. Very rarely this sac ruptures prematurely, and more frequently than otherwise the fœtus is fully developed. We have no satisfactory observation of a fœtus having lived more than ten months in the abdomen of the mother, though Dr. Bond states that a bright red ring encircles the umbilicus of the child when gestation has been protracted. These cases may terminate in a variety of ways. Should the fœtus live to the normal end of pregnancy, generally a kind of labour-pain sets in, and often a decidua is expelled from the uterus. In the mean time the fœtus dies, and after death undergoes a variety of changes. Sometimes the body of the dead fœtus so irritates the walls of the sac that they inflame and suppurate, or even putrefy, and the consequent peritonitis kills the mother, or she perishes with hectic symptoms, exhausted by profuse suppuration. Should the peritonitis not become general the contents of the sac may perforate some neighbouring hollow organ, most frequently the large intestine, sometimes the vagina or bladder; or even the stomach, as in a case recorded by Raneyer, may suffer in this way, or the disintegrating fœtus may escape through one or more fistulous openings in the abdominal wall. By whatever route the discharge takes place, the process of elimination is slow, and while it is going on death may ensue from exhaustion or pyæmia.

When the walls of the sac are less irritated by the dead fœtus, a different series of changes takes place—the soft parts undergo fatty degeneration, become partly reabsorbed, and the contents of the sac, after a lapse of some years, consists only of the bones of the fœtus and a quantity of calcareous plates, form-

ing what has been termed a lithopædion. Even in this state, however, the patient is by no means free from danger, and at any moment inflammation may arise, and be followed by suppuration and death. The name of secondary abdominal pregnancy has been given to those cases where the fœtus originally contained in the Fallopian tube, the ovary, or even the uterus, has escaped after rupture of its sac into the peritoneum and remained there. Dr. Barnes thinks that all abdominal pregnancies are primarily either tubal or ovarian, in which opinion he is opposed to that of most other observers. A case of abdominal pregnancy, unique at least in its mode of occurrence, has been recorded by Koeberlé. He had removed from a patient the body of the uterus and part of the cervix, leaving the ovaries. In the portion of the cervix that remained there was a fistulous aperture opening into the abdominal cavity; through this semen passed, and produced an abdominal gestation. In some cases where the fœtus alone escapes into the abdominal cavity, leaving the placenta in its original place of insertion, a very remarkable preservation of the former sometimes occurs. Whilst inflammatory new formations cover the embryo on all sides, it may doubtless continue to live for a short time, and under these circumstances the very vascular connective tissue closely approaches the skin on all sides, and the soft parts of the body are so marvellously preserved after death that after many years they show perfectly their normal structure.

The diagnosis of abdominal pregnancy is beset with difficulties. Along with the general signs of pregnancy, there is generally metrorrhagia; and this, together with repeated attacks of abdominal pain, due, probably, to intercurrent attacks of peritonitis, occurs more frequently than in tubal gestation. The abdominal enlargement is generally greater transversely, and the fœtus can be felt more distinctly than in normal pregnancy. Per vaginam, the cervix may be felt displaced by the pressure of the cyst, or fixed by perimetric adhesions. Either of these, Dr. Playfair thinks, is of great diagnostic value. We should certainly have recourse to the use of the uterine sound before undertaking any operative interference. In his paper on this subject Dr. Lawson Tait says there are two points invariably to be noticed in extra-uterine gestation which had gone past the period—viz., a show during the false labour, and subsequent diminution in the size of the abdomen, due to the absorption of the liquor amnii. Before the death of the child extra-uterine fœtation may be mistaken for displacement of the normally pregnant uterus, during the early months, for pregnancy complicated with fibro-myoma or cystic disease of the uterus, and more rarely for pregnancy of one half of a double uterus. Indeed in this latter case, as Kussmaul has shown, a differential diagnosis may be quite impossible before death, and very difficult after it. After the death of the child the diagnosis is more difficult, and the case might be confounded with pelvic hæmatocele and ovarian tumour, especially dermoid cysts, cancer, fibro-cystic disease of the uterus, hydatids of the uterus, and phantom pregnancy, with hernia.

Regarding the treatment of abdominal gestation, there is still some difference of opinion, though it is mostly admitted that no active measures should be adopted till the full term of development is reached, because there is not the same imminent risk of death from rupture as in the tubal form; and even if the destruction of the fœtus could be secured there would still be formidable dangers from subsequent attempts at elimination or internal hemorrhage.

If menacing incidents occur when the gestation is so far advanced that a living child may be expected, or if the case has gone on to term and the child be alive, we are strongly advised by the best authorities to perform the Cæsarean section, as we may thereby save the child, and the risk to the mother is scarcely greater than in waiting. An incision large enough to extract the fœtus may be made in the linea alba, and, should there be no adhesions, the walls of the cyst should be stitched to the margins of the incisions to cut it off as much as possible from the peritoneal cavity. No attempt should be made to remove the placenta unless it be quite loose, as otherwise uncontrollable hemorrhage, owing to the nature of its position, is likely to occur. The cyst should be carefully washed out with some antiseptic fluid. Schrœder advises us, when possible, to remove the whole sac, with the fœtus and placenta.

If the child has died towards the end of pregnancy the treatment is merely

symptomatic. Any efforts of nature to eliminate the foreign body are to be assisted by incisions, and the removal of pieces of the fœtus from the abdominal walls, the vagina, or the rectum. The more extensive the adhesions of the sac to the abdominal walls, the more safely can incisions be made to remove its contents; and their formation may be favoured, as in Simon's method of treating hydatid cysts of the liver, by pushing in two trocars, and by dividing the bridge between them, thus causing a larger opening.

—

Acute Fatty Degeneration in Infants.

In the *Archiv für Gynäkologie*, B. x. II. 3, Prof. HECKER relates a case of acute fatty degeneration in a new-born infant. The mother was thirty-two years old, unmarried, and pregnant for the sixth time. The child was a male, and breathed well, but its skin had a greenish discolouration as from decomposed liquor amnii. It died at the end of fourteen hours. At the autopsy, the lungs were found to be expanded, but there were numerous subpleural ecchymoses, and the lungs were filled in all directions with hemorrhagic infarctions. The pericardium also showed ecchymoses, and the tissue of the heart was friable. The liver was of normal size, but coloured deep yellow, and its cells showed advanced infiltration with fatty molecules, which existed also in the heart and kidneys. The author considers this case confirmatory of the views published in the *Klinik der Geburtskunde*, von Hecker und Buhl, Band. i. 1861, by Buhl, who considers that acute fatty degeneration in children has very definite characters, somewhat analogous both to acute yellow atrophy of the liver and to the effects of phosphorus poisoning.

The author relates a second case somewhat analogous to the foregoing. A female child was born at full term on October 28, 1876, whose skin had a dirty yellowish tint, and was covered with petechiæ about the size of a pin's head, especially about the face, but well marked also on the buttocks and lower extremities. The mother was a primipara, but the labour had been normal, the first stage lasting twenty hours, and the second one hour. The child died after three days and four hours. At the autopsy extensive extravasations were found between the muscles on the left side of the neck, there was considerable effusion of blood tearing up the cerebellum, and the whole spinal cord was surrounded with blood. The liver was of fair size, but tinged yellow. The heart and lungs showed numerous ecchymoses, and there were effusions of blood, without lesion of the mucous membrane, in the intestinal canal. On microscopic examination, the liver, heart, and kidneys were found to have undergone a moderate degree of fatty degeneration. The spleen was enlarged, weighing 50 gm., and measuring 10 by 4 cm. The proportion of white to red corpuscles in the blood was about one to six, and there was thus a certain degree of leukæmia. Both the mother and father of the child appeared to be in perfect health. The author remarks that Gerhardt has recorded cases of leukæmia as being not very uncommon in children, and having been observed even at the age of eight or ten weeks, but he believes that it has not hitherto been noticed as occurring congenitally. — *Obstetrical Journal of Great Britain*, July, 1877.

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Fœtal Therapeutics.

At the recent meeting of the British Medical Association Dr. ALFRED H. MCCLINTOCK, of Dublin, presented a paper, which had for its object to defend and strengthen the proposition that medicines given to the mother, for some considerable period of pregnancy, can produce beneficial effects on the fœtus. The author touched briefly (time not permitting him to do more) on the experiments which have been made to test the possibility of any direct transmission to the child *in utero* of drugs administered to the mother; and which experiments seem to have determined this question in the affirmative. This result is corroborated by the fact that many diseases, *e. g.*, variola, syphilis, scarlatina, etc., though contracted by the mother at varying periods *subsequently* to im-

pregnation, may, nevertheless, affect the offspring of such impregnation. He alluded to cases in America, where hypodermic injections of morphia and of atropine, given to the woman during labour or pregnancy, were considered, and with every appearance of truth, to have injuriously affected the fœtus *in utero*. He cited the experience of Simpson with regard to the good effects of chlorate of potash in cases where the fœtus dies *in utero* at the sixth, seventh, or eighth month, from what Simpson called placental phthisis. He also cited the experience of Dr. Thorburn as to the influence of chlorate of potash, chloral, nux vomica, and iron upon the fœtus, when administered to the gravid woman. Lastly, the author described the results of his own experience in the cases of women prematurely giving birth to dead children; and recommended, for the purpose of saving the life of the fœtus, a combination of chlorate of potash and the tincture of the perchloride of iron, given in pretty large doses, for several weeks during the latter half of gestation. In his hands, this combination had been signally successful in saving the life of the fœtus, and consequently in prolonging gestation to the full term. He related several instances where women, who had previously borne one, two, three, and, in one remarkable case, nine dead children, went to the full time when treated on the plan he recommended, and who gave birth to living children. In one of these cases, the treatment was omitted in the succeeding pregnancy, and the child was lost. He also mentioned four cases he had under treatment, and who were then in the last month, and had daily consciousness of the vitality and vigour of the child, by the frequent and ofttimes unpleasant activity of its movements. Dr. McClintock ended his paper by very briefly summing up the heads of evidence in support of the possibility and reasonableness of therapeutic treatment of the fœtus, whether we admit or deny that the medicines directly act upon the fœtus. 1. It is a well-known fact that diseases, *e. g.*, syphilis, smallpox, scarlatina, ague, etc., contracted by the pregnant woman, may be communicated to the fœtus she is carrying. 2. Careful investigations have demonstrated that various drugs, given to the pregnant woman, may reach the fœtus, and be found in its blood or secretions. 3. Clinical observations establish the fact that therapeutical effects on the fœtus *in utero* follow the administration of various medicines, when given to the mother for a sufficient length of time. Dr. Darby (Bray) mentioned a case in which there was a history of the husband having suffered from syphilis; there were fourteen dead children born in succession; but the mother, during her fifteenth pregnancy, having taken a course of bichloride of mercury, the child was born alive.—*British Med. Journ.*, August 25, 1877.

A Case of Vaginismus traced to Spasmodic Turgescence of the Clitoris.

Dr. James R. Chadwick, of Boston, relates (*Am. Practitioner*, July, 1877) the following interesting case in which vaginismus was traced to spasmodic turgescence of the clitoris.

February 25. Mrs. E. R., twenty-nine years of age; has been married ten years; has had one child and two miscarriages, the last of these having occurred accidentally one year ago. The catamenia, which formerly lasted three days, have recently become scant, and last but one day.

The patient is very stout, being only four feet eleven inches in height, and weighing two hundred pounds. She runs a machine for the sewing of carpet and cloth slippers, which is propelled by steam power. Until steam was introduced, she suffered constantly from "womb troubles."

She seeks relief from frequent micturition, and more especially from spasmodic pains that start at the vulva and run into the cavity of the pelvis. Of late these have commenced almost every evening between seven and twelve o'clock, and have persisted with scarcely any intermission until four in the morning. They have occasionally occurred during the day. They have sometimes been excited by coition, sometimes by micturition, and often start spontaneously. The suffering is very intense, entirely banishing sleep.

On examination the uterus was found to be in normal position, to be slightly elongated, to have a tender fundus and a congested cervix. There was no

tenderness of the urethra or bladder. Tinct. hyoscyami, thirty drops, was prescribed three times a day, to allay vesical irritability. Coition, which had been practised every night for several months, was interdicted oftener than once a week.

March 20. Micturition less frequent, but the other symptoms unrelieved. A careful visual examination was made to discover any excoriation, hypertrophied papillæ, or even injected spot which might give rise to the symptoms by reflex action, since the patient complains of a sore spot. Nothing, however, was found until I touched the point of the clitoris, which of course I had at first designedly avoided. She immediately exclaimed at the tenderness, while my attention was drawn to the instantaneous contraction of the introitus vaginæ. Seeking to explain this latter phenomenon, I found it was due to the sudden turgescence of the bulbs of the clitoris, which, as is well known, lie along the lower margins of the ischiopubic rami. Contrary to my expectation, there was no contraction of the sphincter vaginæ. The sensation to the patient was decidedly painful, and precisely the same as the first pains felt at each of the spasmodic attacks. She said at once, "that is the way my attacks begin." Subsequently the spasmodic pains were said to be felt throughout the vagina, running up into the abdomen.

Having recently had very satisfactory experience with the use of bromide of potash, to allay erotic sensations in cases of masturbation among women, I prescribed ten grains to be taken when the attack commenced, and the cold vaginal douche twice daily.

24*th*. The patient reported having had a very severe attack, during which, in the course of five hours, she had taken seven doses of the bromide without relief. I ordered fifteen grains to be taken three times a day regularly.

July 14. The patient returns to report entire relief from the distressing pains having ensued after two days, during which the bromide of potash had been taken as ordered. They have not since recurred. The frequent micturition, of which complaint is again made, seems to be due to the pressure of the congested uterus upon the bladder. A touch upon the tip of the clitoris still induces turgescence of the bulbs, but is no longer accompanied with pain.

I report this case, because I can find no other on record in which such spasmodic pains have been traced to the clitoris as their starting-point. The tenderness of the apex of the clitoris was not so great, nor the momentary spasm so severe, as to indicate so distinct a reflex character as is usually found in vaginismus.

In ordinary vaginismus the spasmodic contraction of the muscular walls of the vagina follows immediately upon the local irritation produced by the finger, speculum, male organ, etc., and persists only a short time after the source of the irritation is removed. In my patient, the peripheral origin of the spasms seemed less manifest. The attacks came on with darting pains clearly connected with spasmodic erections of the clitoris; these gradually increased in intensity until the whole vaginal tract, and, for all I know, the uterus and Fallopian tubes participated in the spasmodic action. They were sometimes excited by local irritation (micturition or coition), and often occurred idiopathically. They always persisted for hours.

Notwithstanding the prominence I have given to the above divergences from the ordinary type of vaginismus, I still assume that the excessive venery to which my patient had been addicted for several months was the origin of the neurosis as well as of the uterine congestion.

The relief derived was distinctly attributable to the bromide of potash *in the continued doses*. She was no better for several weeks during which sexual intercourse had been reduced to reasonable limits, and the medicine was taken only at the commencement of and during the attacks. This result tallies perfectly with my experience of this drug for the purpose of diminishing or even completely banishing erotic sensations, while the habit of self-abuse in women is broken up.

It will be remarked that I have assumed the spasmodic contractions of the vaginal walls, never having seen the patient during an attack. I believe this to be justified by the data on which the diagnosis has been based, although I

consider the disease to have its seat in the nerves. This assumption only establishes an analogy between this case and cases of facial neuralgia accompanied with twitching of one or another of the facial muscles that is under the influence of the nerve affected. This view brings the disease into the class of vaginal neuralgias imperfectly described by Vidal de Cassis, Simpson, and others. I have preferred, however, to retain the title vaginismus, for the purpose of associating the case with the most common manifestations of the disease.

Finally, it must always be borne in mind that painful coition is not, in most instances, vaginismus; hence, the term dyspareunia, recently proposed by Dr. Barnes, must obtain a footing in our nosology, unless a better one be proposed.

—

The Treatment of Fissures of the Cervix by Plastic Operation.

Prof. Breisky, of Prague, relates (*Wien. Med. Woch.*) his experience of cicatricial eversion of the os uteri resulting from fissures of the cervix and its treatment by the operation recommended by Emmet—namely, paring the edges of the fissures and uniting them by silver sutures. Although an anatomical and etiological description of the condition had previously been given by Roser, the author had not recognized its frequency and importance until reading Emmet's article. He is now convinced that he had frequently regarded and treated simply as erosion of the cervix and hypertrophy of its two lips cases which in fact depended on bilateral fissure, the cervix being rolled outward, and the apparent os being really the cervical canal at the level to which the fissures had reached.

In the course of a year the author has met with fourteen characteristic cases of the lesion, nine in private and five in hospital practice. Of these only five consented to undergo the operation. In all cases the symptoms complained of dated from a delivery, usually one in which the labour was rapid, and not completed by artificial means. In most of the patients menstruation was excessive, and in only one was it scanty. In three of the five cases operated on, the fissures on both sides healed by primary union; in the remaining two primary union took place at one side only, and success was completed by a second operation. In no instance did febrile symptoms arise, or inflammation in the neighbourhood of the wound, but in one a complication arose which could not be directly connected with the operation. On the eleventh day, after the sutures had been removed, a hæmatoma in the recto-vaginal septum arose from straining during defecation, and this eventually made its way into the rectum. The patient had afterwards an attack of pleurisy, and the final result of the operation in her case, as to relief of symptoms, could not yet be ascertained. Three of the remaining patients were completely relieved from their sufferings; the fourth had still to wear a Hodge's pessary, on account of retroversion and flexion, but her condition was much improved, especially in respect of menorrhagia. The most striking case was that of a woman thirty-one years old, who had suffered ever since the birth of her last child, eight and a half years before. She was almost incapable of walking, and the attempt to take exercise so increased her pains as to give rise to vomiting and faintness. She could never walk more than one hundred steps, and at every menstrual period was obliged to keep her bed. Protracted and diverse treatment, including cauterizations and the use of various pessaries, had led to no improvement. The plastic operation was performed, and the vivified surfaces were so considerable that on the right side ten and on the left four sutures were required. No inflammatory symptoms followed the operation, and a month after it the cervix was small and conical, without a trace of the erosion, which had previously obstinately resisted cure. The first menstruation after the operation was painful for the first two days, at the end of which a small clot was expelled; but the following periods were progressively free from pain. Seven months after the operation she was in good health, had lost all pain, and was able to walk with freedom.

In the execution of the operation the only difficulty Professor Breisky has found is in the resistance of the tough tissue of the movable cervix to the passage of the needles, and he finds it desirable to make counter-pressure with a

strong blunt hook. He has not found any serious bleeding to occur in any case, but, as a matter of precaution, he uses, in place of Emmet's uterine tourniquet, an adjustable compressor invented by himself. This consists of a long pair of forceps ending in semicircular blades at right angles to the shanks. The degree of compression is regulated by a spring catch attached to the handle. The cervix is fixed by tenaculum forceps or hooks to prevent its slipping backwards. The author claims for this instrument the advantage that the pressure can be regulated at any moment, and that it can be reserved for the moment when it becomes necessary, and needless crushing of the tissue thus avoided. Professor Briesky confirms all the evil results attributed by Emmet to cicatricial eversion of the cervix, and he considers that it is also apt to give rise to chronic peri-uterine cellulitis, from which result cicatricial bands, which gradually disappear after the closure of the fissure by operation.—*Obstet. Journ. of Great Britain*, August, 1877.

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Case of Inversion of the Uterus.

Dr. JOHN G. BLAKE records (*Boston Med. and Surg. Journal*, Aug. 23, 1877) the following interesting case of this rare accident:—

Mrs. H., aged twenty-five, American, in good health until present illness; married three years, and mother of two children. Nursed first child until it was thirteen months old. Second child was born May 7, 1876. Labour of only three hours' duration terminated naturally. During labour she took ergot, and was urged to make undue exertion by the attending physician. The child was very large. Delivery of the placenta followed in a few minutes and was not hastened by traction on the cord or by introduction of the hand into the vagina. Is not aware of suffering any severe shock at the time. Continued to feel weak during seven days, and at the end of that time noticed that "her womb came down" while straining at stool, appearing outside of vulva. She "put it back" herself and sent for her physician. He, it appears, did not recognize the nature of the difficulty. She had retention of urine for the week following. Two weeks later the uterus again appeared externally. She remained in bed for two weeks after the birth of her child and was up at the time of the second prolapse. Hemorrhage constant from the time of delivery until visited by me eleven weeks afterwards, and she had been confined to her bed, except for short intervals, during the whole period. So far, the patient's statement. Her physician considered the case to be one of polypus of unusual character, and postponed operative measures until her health improved.

When first seen she was very much enfeebled by loss of blood, and complained of a feeling of weight and dragging about the back and loins. Vaginal examination revealed a tumour filling the vagina and appearing just inside the vulva, somewhat pyramidal in shape, of firm consistence, white colour, and having much the appearance of a fibroid. It did not, however, have the stony hardness of the latter. The finger passed high up could be swept quite around the cul-de-sac, and the diagnosis could be made with tolerable confidence. The rectum was distended by feces, preventing a complete examination. Next day was appointed for attempting reduction.

An interview with the former physician and some looking up of the subject impaired my confidence in the diagnosis, and began to make me fancy it might be a fibroid polypus. I suppose many of us experience similar doubts in cases where absolute certainty does not exist. Dr. Fitz kindly saw her with me next day, and the rectum having been thoroughly evacuated and a thorough examination made possible, a correct diagnosis was easily made.

The patient was etherized by Dr. W. A. Dunn, and having been placed upon her back the first method was followed. The uterus was grasped firmly by the hand, the vagina put upon the stretch, and steady pressure was made obliquely upwards and backwards in the axis of the pelvis, lateral compression being made at the same time, with the end to reduce first the part of the uterus inverted last. After ten minutes' continuous effort without apparently affecting anything, my hand became fatigued and Dr. Fitz took hold. After the expira-

tion of another ten minutes the organ began to diminish in size and to return to its normal position, so that when I again resumed the completion was a matter of only a few moments. There was none of the snap of spontaneous return mentioned in the books in this case; the fingers were not only obliged to follow the fundus and push it into place, but to remain in utero until the cervix began to contract. External manipulation hastened this, and within half an hour the organ was fairly contracted. There was very slight hemorrhage during the operation, none of any consequence after. The patient was kept in bed for a week and then allowed to sit up. Nothing important occurred afterward; there was a lame back and a sense of soreness in the right iliac region, but no pain or leucorrhœa. There also remained for some time more or less vertigo, referable to excessive loss of blood, which time and tonic treatment wholly removed.

Medical Jurisprudence and Toxicology.

On Santonin Poisoning and its Treatment.

Poisoning by santonin is very rare. The following were the symptoms in the case of a child, aged twenty-five months, described by BINZ and BECKER in the *Archiv für Experimentelle Pathologie und Pharmacologie*, 1877. Ten hours after swallowing one and a half grains, there were left external strabismus, twitchings of the angle of the mouth, eyes, and eyelids, dilatation of the pupils, especially the left; after some minutes, clonic cramps of the left upper extremity, beginning in the fingers, and loss of voice; after fifteen minutes, tonic cramps of the left eye and arm, followed by general convulsions. From time to time there were short intervals of freedom from the cramps. Later on, spasmodic contractions of the thoracic and abdominal muscles set in with marked slowing of the respiration, accompanied by stridor, but the heart's action remained strong, and the pulse was almost normal. After lasting about five hours the cramps disappeared, but reappeared to a less extent, with diminishing severity, for the following three days. All this time the urine was intensely greenish-yellow coloured.

Experimenting with frogs, Binz found that sodium-santonate, in poisonous doses, produced general prostration, cessation of respiration, and, later, convulsions of the trunk and extremities, which were unaltered by the removal of the cerebral hemispheres, but which ceased entirely when the medulla was excised. The heart at first was unaffected, but after a time came to a stand-still in diastole. The general insensibility that first showed itself was soon followed by paralysis of the nerve-centres, later by irritation of the middle brain and medulla, and finally by general paralysis.

Warm-blooded animals exhibited the same class of symptoms as those manifested in the child—sudden cramps, rolling of the eyes, gnashing of the teeth, opisthotonos passing into cramps of the trunk and extremities, and slowness of respiration—these attacks being succeeded by periods of remission. The parts chiefly affected seemed to be the cranial nerves, from the second to the seventh, the middle brain, and subsequently the medulla. Santonin does not appear to act as a heart-poison in the ordinary sense.

In Ziemssen's *Handbuch* the treatment laid down is alcohol, artificial respiration, friction of the skin, warm baths, and cold applications to the head. Of these, artificial respiration is the only treatment Binz found of any value. He tried also amyl-nitrite, morphia, chloral-hydrate, chloroform, and ether, but only the last three proved of service. Ether he recommends to be given to overcome the cramps, and at the same time chloral-hydrate, which acts more slowly as an antidote, but with more permanent benefit.—*London Med. Record*, June 15, 1877.

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THE MONTHLY ABSTRACT

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Anatomy and Physiology.

Inhibitory Nerves.

THE occurrence of the so-called inhibitory actions of certain nerve-centres is sufficiently familiar to all physiologists. The existence of nerves naturally conducting impulses of this nature, which was first established by the observations of the brothers WEBER on the pneumogastric nerve, and the power of this nerve, when stimulated, or when divided and its distal extremity stimulated, of arresting the action of the heart in diastole, has been supported by all succeeding observers, as well as by the well-known fact that a sudden or profound moral emotion will arrest voluntary movements whilst sudden pain inflicted on a sensory nerve will induce a similar arrest. The direction of the fibres conducting such inhibitory impulses, and the position of the centres from which they emanate, have been but little studied. An interesting paper has, however, just appeared in which these points are investigated by Langendorff, in the first part of the new series of Dubois Reymond's *Archiv de Physiologie.* He commences by observing that the influence by which reflex actions are inhibited may start either from the brain or from the periphery. The cerebral, or as Langendorff prefers to call it, the psychical, form of reflex inhibition is a specific function of a certain part of the brain, and during life is in a constant condition of mean tension. His experiments show that the seat of this mechanism is not to be looked for in the lobi optici alone, but that the cerebral hemispheres are, to some extent at least, implicated, and, in fact, that the inhibitory reflex power of the brain is an essential factor of the intelligence. In accordance with this is the fact that new-born animals have comparatively little power of cerebral reflex inhibition, which is first acquired when gradually maturing consciousness subjects the actions of the body to control.

That form of reflex inhibition which proceeds from the periphery is manifested when some sensory irritation (besides that causing the reflex action) is conducted to the spinal cord. It is unlikely, he thinks, that there are specific reflex inhibitory mechanisms in the spinal cord; a direct influence of the sensory excitation upon the reflex centre appears much more probable. Possibly centrifugal motor impulses proceeding from the brain course through the medulla in the same way, but it seems doubtful whether the reflex inhibitions proceeding from the cerebrum admit of identification with the psycho-motor impulses.

The reflex inhibitions which Dr. Langendorff has chiefly investigated are those which are of cerebral or psychical origin. He has shown that reflex excitability is exalted not only by division of the mid-brain (as Setschenow states) but also of the hemispheres. He therefore concludes that reflex inhibitory mechanisms exist in the cerebral hemispheres of the frog. He has further shown that complete division of the cerebrum, or at least of the mid-brain, from the medulla is required in order to exalt the reflex activity of the whole body, but that lateral division of these organs is sufficient to cause increase of reflex activity on one side of the body. On the other hand, chemical excitation of one-half of the transverse section of one optic thalamus occasioned in his

researches lateral reflex depression of the opposite side. It follows from all this that the reflex-inhibitory influence of each half of the brain extends over one side of the body; the right half of the brain influences the left side of the body, and the left half of the brain exerts an inhibitory influence over the reflex actions of the right side of the body. Hemilateral section of the medulla oblongata just below the cerebellum consequently exalts the reflex actions of the opposite side. On the other hand, a section made through one-half of the medulla oblongata behind the fourth ventricle causes an exaltation of the reflex actions of the leg of the same side. Hence it follows that the conductors of reflex inhibitory impulses decussate in the medulla oblongata, which is in full accordance with the observations of Stieda, that in the frog commissural or decussating fasciculi are observable in the middle line of the medulla oblongata. —*Lancet*, Sept. 15, 1877.

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The Influence of the Spinal Cord on Temperature.

One of the most interesting subjects in physiology, and one upon which much experimental investigation has been made with very conflicting results, is that which deals with the relations between body heat and the nervous system. That there is an intimate relation between the two cannot be doubted, for since thermometry has come into general use as a clinical aid, there have been numerous instances recorded in which no other cause but a lesion of the nervous centres could be assigned for unusual and surprising variations in the temperature of the body. Of course, explanations of the relation between the lesion and the apparent effect have not been wanting, and hypotheses have been put to the test of experiment. Experimentation, however, has not simply endeavoured to explain these hypotheses; it has added others more or less tenable, until the subject has become one of the most disputed questions in science. The reason of the contradictions and various assertions that have been made on this subject is to be found doubtless in the complexity of the subject, and the want of knowledge upon all modifying conditions. This, however, may be conceded, that of all regions of the nervous system, the spinal cord has seemed to play the chief part in anomalous variations of body heat. This has been attributed to its close connection with the great system of vaso-motor nerves, and views founded upon this connection, more or less elaborate, have been propounded to explain the thermic effects of spinal lesions.

A recent contribution to the literature of the subject has been made by M. PARINAUD, of Paris, and is to be found in the *Archives de Physiologie*. The conclusions he has arrived at, after numerous careful experiments, have not been in accordance with previous writers; nor, indeed, did they bear out the anticipations he had formed of them. He tells us that he was led to the inquiry by observing, in a case of fatal epileptiform convulsions, that the rise in temperature, which occurred *pari passu* with the fits, did not cease with the cessation of the fits, but continued to mount till death, which occurred six hours later, when it reached 108° F., and soon after death 110°. It was then evident that the great rise in temperature could not be attributed solely to the muscular contractions; and M. Parinaud thought a more feasible explanation of it could be found in assuming a general relaxation of the vaso-motor nerves after their prolonged excitation. It was to determine this that he entered upon an experimental inquiry.

The experiments in question were made on rabbits, and consisted in observing the changes in temperature at various parts of the surface of the body and in the rectum, consequent upon sections of the spinal cord in the dorsal region. At the same time the temperature of the surrounding air was noted, so that due allowance could be made for any loss of heat by radiation. Simultaneous observations were taken of the temperature of the rectum, that of the inguinal and axillary regions respectively, and of the surface of the anterior and posterior extremities. The main result of the research was that the rectal temperature fell constantly from the time of section until death, that the deep temperature of both the paralyzed and non paralyzed parts (*e.g.*, the axilla and groin) also proportionately fell, but that in the paralyzed limb it was lower than in the non-

paralyzed. On the other hand, the cutaneous peripheral temperature was higher in the paralyzed foot than in the fore-foot, and remained so for some time after the section. It was found, however, that this rise of the cutaneous temperature was more marked when the atmospheric temperature was low, and it was further noticed to be distinctly transitory in its duration, for if the animal survived long enough the paralyzed foot became colder than the non-palsied. The fall in the rectal temperature was not influenced by the temperature of the environment, unless a great difference existed between the latter and that of the animal; and, the loss in the hind limbs being attributed to diminished production of caloric, the rectal lowering was held to be due to the diminished amount of nutritive activity required for these regions. To sum up these results in other words: transverse sections of the spinal cord in the cervical or dorsal region led to a fall in the central temperature of the body, even when the surrounding air attained a heat of 28° C. (82.4° F.) or 30° C. (86° F.). This lowering of the central temperature appeared to be due to the cooling of the paralyzed parts, the deep temperature of which remained during the whole experiment at a lower level than in the regions still under the influence of the spinal cord. But in the paralyzed parts there was a rise in the surface temperature of the extremities, a rise probably owing to a transient vaso-motor paralysis, for it passed away in time, and depended for its degree upon the initial temperature of the skin and the surrounding atmosphere. The lowered central temperature depended on the diminished production of caloric and on greater radiation.

Naunyn and Quincke, whose names are well known in connection with this subject, attributed the whole of the loss of central temperature to the increased loss of caloric by radiation from the larger surface of blood exposed by the paralysis of vaso-motor nerves, and they held that section of the spinal cord actually increased the production of animal heat, an increase which was more than counterbalanced by the greater loss by cutaneous radiation. The "warm chamber" experiments, upon which these authors base their conclusions, and in which they obtained a rise in the central temperature of the body of rabbits after destruction of the spinal cord in the cervical region, are, according to M. Parinaud, not to be relied on, as sufficient care was not taken to prevent the saturation of the air with the exhalations from the animal; and Delaroche and Berger have shown how warm-blooded animals vary in their power of resistance to dry or moist heat.

The diminution of the temperature in the paralyzed parts does not appear to be due to paralysis of the sympathetic, and the rise of cutaneous temperature, which, according to Naunyn and Quincke, is the immediate cause of the systemic cooling, is not invariable. It is also transitory, disappearing on the second day, and if the animal survive, the reverse effect is seen to that produced in the first twenty-four hours, the skin of the paralyzed part becoming colder than that of the non-paralyzed. The theory of Naunyn and Quincke is then not admissible, but in certain conditions an animal with the divided spinal cord is more easily warmed than is a healthy animal. Not that it produces more caloric, but the mere division of the cord leads to a diminution in the processes of tissue-oxidation and to the suppression or at least the notable restriction of the power possessed by all warm-blooded animals, of regulating their temperature in spite of external variations. There is no doubt that evaporation, radiation, contact, etc., affect the animal heat, but these influences are to a certain extent controlled by the vaso-motor system, which governs the contraction of the bloodvessels. By cutting the cord, this resistance to the environment is destroyed, and the condition of the animal is reduced to that of a cold instead of a warm-blooded creature. Thus it happens that if between the temperature of the animal and that of the surrounding medium there exists so great a difference that the former yields more caloric than it receives, the animal becomes cooler. Then, if the external temperature be raised, a point will be reached when the animal no longer yields more than it receives, and its temperature will be stationary; and further, if the ambient temperature be raised still more, the animal will receive more heat than it loses, and will be actually warmed.

Lastly, as to the precise manner in which the spinal cord operates, it must be feared that physiology is still much in the dark. Tscheschichin, in his experiments of puncture of the medulla followed by rise in temperature, supposed that the spinal cord exerted a moderating influence upon thermal changes, which was withdrawn when the cord was injured or divided. But M. Parinaud thinks the increased heat-production better explained by irritation of the gray matter in these experiments, and the records of extraordinary high temperatures following spinal injuries are held to favour this view; for in all such cases some time elapsed before the rise in temperature took place after the receipt of the injury, thus allowing of the supervention of inflammatory and irritative processes. He urges that the reason why experimental inquiry does not reproduce these phenomena is probably because animals are less prone to traumatic myelitis than human subjects, just as they enjoy immunity from severe peritonitis. Moreover, there are cases of spinal traumatism in man which have been marked by remarkably low temperatures—the true effect of the spinal lesion without inflammatory changes. In concluding, M. Parinaud states his belief that the spinal cord influences animal heat by means of nerves distinct from the vaso-motor system, and, indeed, which may be imagined to have an action quite contrary to that set of nerves. At the same time, he does not think it necessary to invent a distinct system of "calorific" nerves, but believes those nerves to be sufficient which regulate the processes of nutrition and secretion, of which calorification is simply the physico-chemical result. This view does not entail the belief in any specially localized thermic centre in the cerebro-spinal axis, but it is not opposed to the existence of moderator centres of calorification, either, as Tscheschichin says, by restraining the activity of the spinal cord, or acting by means of nerves ruling the expenditure of caloric. The presumed existence of such thermic centres has certainly the advantage of simplifying an intricate, and as yet incompletely studied, subject.—*Lancet*, Sept. 29, 1877.

Materia Medica and Therapeutics.

Boracic Acid Ointment.

Mr. Arthur W. Bateman, calls attention (*British Med. Journ.*, Sept. 22, 1877) to the value of Professor Lister's boracic acid ointment as a dressing for wounds in general. During the last two years, he has been in the habit of using it, and has concluded that it is preferable to either dry lint or other dry application, and also to water-dressing. For wounds, when hemorrhage has been stopped, or can be caused to cease by the application of light pressure, it is very useful; for, owing to the smooth waxy consistency of the ointment, the dressing does not at all adhere to the edges of the wound, nor to the clot between its margin. The dressing can, therefore, be removed and replaced as often as is advisable for the examination of the wound, without disturbing the healing process. Any discharge that forms can also easily escape between the layers of ointment and the skin around the wound. The ointment is thus preferable to dry lint, except in those cases where there is a great amount of oozing, when the dry lint and blood may act beneficially by forming an artificial scab. Water-dressing may be regarded as an inefficient mode of poulticing, and wounds that do not require poulticing can be better treated with the ointment than with water-dressing; for prolonged water-dressing generally irritates the skin round the wound, which becomes sodden and sore; while the skin remains comparatively healthy under the ointment. The smooth surface of the ointment is less liable to destroy by friction or otherwise damage the surface of the granulations than is the lint. The ointment never sticks to the surface of the wound, and no pain or injury is caused on removal of the dressing. Another great advantage is that, owing to the antiseptic quality of the boracic acid, the dressing

need only be removed every second or third day, unless the discharge be profuse. Thus time is saved with hospital patients. Mr. Bateman has noticed that small lacerated wounds—for example, of the fingers—will keep perfectly sweet for twenty-four hours under the ointment even in tropical climates, and here they keep quite sweet for two days; whereas water-dressing generally requires to be reapplied every twenty-four hours. In applying the ointment the dressing should extend far beyond the edges of the wound on to the surface of the surrounding skin, so as to interpose a considerable antiseptic interval between the margin of the wound and the limits of the dressing. This is the more important in proportion to the amount of discharge.

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Albuminate of Mercury and Other Mercurial Salts for Subcutaneous Injections.

Some interest has been excited during the past year by the use of mercurial albuminate as a subcutaneous injection. A preparation was some years ago devised by Dr. Staub, of Strasbourg, and its use is familiar to a few under the name of chloro-albuminate. It is, however, to Bamberger, of Vienna, that the revival of the use of the albuminate is due, and he has given most elaborate directions for the preparation of the compound. The first point is to be sure that no corrosive sublimate is present, and this is more difficult than might be supposed. A clear solution of albumen is obtained by diluting white of egg, free from membrane, with one and a half its weight of distilled water. To 100 c.c. of this 60 c.c. of a five per cent. solution of corrosive sublimate and 60 c.c. of a twenty per cent. solution of chloride of sodium are added. Distilled water (80 grammes) is also added, to bring the measure up to exactly 300 grammes. This solution contains 0.010 Hg Cl_2 in every cubic centimetre, and will keep well in ordinary temperatures.

Still, there seem to be so many difficulties in obtaining a satisfactory result that a mercuric peptone has been proposed as a substitute, and in recent cases has been used by Bamberger himself. This is made in the following manner. One gramme of meat peptone is dissolved in 50 c.c. of distilled water. Next 20 c.c. of five per cent. sublimate is added. This produces a cloudiness which is cleared off by adding 15-16 c.c. of a twenty per cent. sodium chloride solution. This gives a preparation containing one per cent. of mercurial peptone, which has given satisfaction. Some other methods of preparation have been proposed, but the above give sufficiently satisfactory results. Sometimes the liquid on keeping deposits small quantities of a whitish sediment, probably calomel. The supernatant liquor may in such an event be poured off and used. The diminution in strength will be very slight, as we have never known much deposit take place. It is probably produced by an excess of albumen having been employed.

The use of calomel subcutaneously has also been tried, and Kölliker reports favourably of its powers in syphilis. The preparation is much more simple. It is only necessary to rub up the calomel with ten times its weight of glycerine. A syringe must be used with a free canal through the needle, and if the injection be made slowly and carefully, no irritation ensues. We should not be surprised if calomel injections eventually find more favour than those of the soluble salt; but whatever preparation be resorted to, it is important that the doses be carefully administered, the power of the subcutaneous method being well known. An improvement in the calomel injection may be made by adding a small quantity of distilled water. In any case, however, insolubility seems to be an *à priori* objection to salts intended for injecting under the skin.

Such being the preparations at our disposal for introducing mercury into the system by the subcutaneous method, our readers may next wish to hear the experience of those who recommend this plan of treatment. It may be admitted that the albuminate or peptone of mercury offers us the advantages of a soluble salt which is more easily assimilated and much less irritating than corrosive sublimate. If, therefore, the hypodermic method be carefully carried out by skilled practitioners, it holds out hopes of favourable results whenever

it is desirable to give mercury. Nevertheless, even those who admit this will in not a few cases be content with the old methods of administration; while others who adopt the new plan will, like Lewin, be content with the old preparations.

Neumann, in a communication to the Vienna Academy, professes a strong preference for the albuminate as the most effectual and least painful preparation. He injected once a day, and sometimes twice, without producing toxic symptoms. Only twice did stomatitis take place, in one case after the seventh, in the other after the fifteenth injection. The slight reaction that occurred, and the rapidity of the effect on syphilitic symptoms, induced him to regard the plan with great favor. It is certainly cleanly, and requires but small quantities of mercury to be introduced into the system. In Neumann's cases from twenty to fifty injections were required to get rid of the syphilis. Vesicular, papular, and squamous eruptions were the most tractable, but injections used in anticipation of their appearance did not prevent them. Psoriasis was soon cured, but gummata were obstinate. The effect in iritis seems uncertain. In one case he had to give it up on account of œdema of the injected eyelid. We wonder he should have ventured to inject in that part. If it is the constitutional effect that is desired, what is the use of injecting near the local manifestation? The bugbear of *local* injection is sometimes in the way with narcotics, but with mercurials we are astonished beyond measure at any one incurring such a risk.

Lewin, of Berlin, to whom we have already referred, has the greatest confidence in injections of corrosive sublimate, which he has regularly used since 1865. He speaks with considerable authority, since he has tried the plan in 14,000 cases of syphilis. About twenty-five injections per case is the average that is needed. A few abscesses have occurred when the operators were not careful—not more than one in twenty cases—and Lewin has never known them to confine a patient to bed. These injections, it should be understood, are by no means painless, but the success has been generally admitted. Comparing the results of Lewin's clinic before he introduced the plan, we find the following striking results: From 1855 to 1865 each patient spent on an average ten weeks in the hospital; since 1865 only four weeks. If the duration of the disease is thus to be reduced as ten to four, the gain is indeed great, and this alone might satisfy Lewin, and make his practice more followed. How about relapses, the touchstone of success in syphilis? These have been reduced from 80 per cent. to 40 per cent. Such success is indeed gratifying, and inasmuch as it has been obtained in a public hospital, is entitled to the highest respect. We should add that it has not been attained by a treatment limited to a few weeks, but that not unfrequently the injections have been spread over long periods—sometimes a year or more.

It is right to state that Sigmund, though a firm believer in mercury, does not attach so much importance to this mode of administration. He has used corrosive sublimate, bicyanide, and calomel in subcutaneous injections. The last in full doses he often found to cause abscesses; the bicyanides he found to cause the least irritation. He thinks the method best adapted for the milder cases, as he found visceral tubercles and gummata most obstinate—a result, it must be admitted, common to other plans of treatment. He seems to attach no special value to the albuminate over the sublimate. It would seem that the question is the injection of a soluble salt under the skin as against other forms of administration; and certainly, provided the experience of Lewin, Bamberger, and others be confirmed as to the rarity of inconveniences, it seems undeniable that there are advantages pertaining to the subcutaneous method which in many cases will be as highly prized by the patient as by his adviser.—*Med. Examiner*, Sept. 13, 1877.

Medicine.

On the Medullary Form of Leukæmia.

In the *Berliner Klinische Wochenschrift*, December, 1876, Nos. 49, 50, 51, and 52, is a series of papers by Professor F. MOSLER, on the Clinical Symptoms and Treatment of Leukæmia, as it affects the Medulla of Bones. The subject is one of considerable importance, but has attracted as yet but little notice in England since Neumann first called attention to it. There are, at present, very few observations on the *post-mortem* appearances of such cases, and none of their recognition during life. The author, after referring to the already cited cases by Neumann, and to those by Waldeyer and Ponfick, goes on to say that two forms of leukæmic hyperplasia may be distinguished in the bones. In one, the marrow is yellow, grayish-yellow, or greenish-yellow, here and there looking like pus; in the other, it is gray red, or muscle-red, jelly-like, juicy, and glassy. The first instalment towards the symptomatology of this new form of leukæmia was found in a well-marked case of splenic leukæmia under Dr. Mosler's care, and in which there had been pain in the sternum during life. After death, a general affection of the skeleton was found, not unlike a purulent osteo-myelitis.

In the present communication, a second case is recorded. A man, 45 years old, a ship's captain, was seized with pain in the breast and gastric oppression after exposure to inclement weather. Later on, he had pain in the left thigh when walking. The patient was in good general health, and without distinct signs of anæmia. The sternal pain was particularly noticeable, not only on percussion, but also on pressure. The heads of some of the bones were swollen and painful on pressure. The left posterior superior iliac spine was in a similar condition, and the left trochanter also. The remainder of the skeleton was but little abnormal. The spleen was much enlarged; the blood of the colour of *chocolat au lait*. The white corpuscles were in the proportion of 1 to 5 red, and they showed an unusual variation in their size; the red corpuscles very spinous, and much molecular matter lay about. Transfusion was first adopted, 210 grammes of defibrinated human blood being injected into the left radial artery; at the same time, 200 grammes of leukæmic blood were taken from the right median vein. Very little relief seems to have been afforded by these means, rather the reverse, for rigors and fever followed, and the wound in the radial artery was so difficult to control that the patient lost nearly two-thirds of a pint of blood from it. The excessive pain in the sternum was still as noticeable as ever, but the ribs had returned to their normal condition. A microscopical examination of the blood showed that the red corpuscles were remarkable for their processes and dentations—the white of two quite different forms; the one double the size of the other, and full of small fat-granules. This larger form, never observed in his earlier cases of leukæmia, leads Dr. Mosler to affirm that they are characteristic of medullary lukæmia. The red were to the white corpuscles in the proportion of 3 to 2. The patient was now faradized, twice daily for fifteen minutes, over the splenic region, and piperine, oleum eucalypti, and hydrochlorate of quinine, were administered internally in the form of a pill three times daily. Under this treatment he improved so much, that it was with difficulty he could be persuaded to remain in the hospital. The tendency to bleed had disappeared, and the body-weight had increased a pound. The spleen and liver had become considerably smaller, and the blood, though still showing a remarkable variation in the size of the corpuscles, contained only one white to nine red. Notwithstanding this amelioration, within the last few weeks, elastic tender swellings had appeared on several of the ribs.

To complete the diagnosis, the diseased sternum was now explored by Professor Paul Vogt. The bone was very soft, and a blood-tinged mass was withdrawn in the canula, which contained in quantity large white corpuscles, similar to those in the blood. Red blood-corpuscles and oil-drops were present more sparingly. By undertaking this exploration, Mosler remarks, the diag-

nosis of medullary leukæmia has been proved for the first time during the life of the patient.

The medicinal treatment was continued with still further improvement, so that it would seem that therapeutics brought about a retrogression, or, at least, a stationary condition of the leukæmic process.

The etiology of medullary leukæmia has hitherto received but little elucidation; it could hardly be otherwise when the symptomatology was so very incomplete. Leukæmia has been ascribed to abdominal obstructions, menstrual disturbances, syphilis, ague, intestinal catarrh, etc.; and injuries have been thought to lead to its production, more especially to that form affecting the bones. This case and another seemed due to a severe chill. With regard to the question of priority of attack, whether osseous or visceral, stress is laid upon the fact that, in the case with which the paper deals more especially, the early symptoms were pains in the bones, and not till long after came the feeling of discomfort in the region of the spleen. Considering that the patient was a man of more than average intelligence and thoroughly trustworthy, Mosler thinks it fair to conclude that the affection was a primary medullary leukæmia. He agrees with Neumann, that the changes in the bone play an essential part in the pathogenesis of leukæmia; but he thinks that the varieties of the disease are usually combined, and he does not agree that the splenic and lymphatic changes are always sequential, and that in the bone-marrow constant. This opinion is supported by other cases by Ponfick and the author, in which the bone affection was, apparently, secondary to the splenic. Ponfick's case was that of a man who, in the year 1874, received a severe blow in the left side. This was followed by a violent pain, which compelled a relaxation of work for some time. It ceased, and then returned, and gradually all the symptoms of splenic leukæmia manifested themselves. The author's own case has been already recorded in Virchow's *Archiv*, Band lvii. p. 534. A man of 44 had long suffered from intermittent fever and pain in the side, and splenic swelling remained. In considering the origin of the disease, the clinical symptoms must be taken into consideration, and in those cases of primary bone-disease the bone-pain has been early and spontaneous. Ponfick holds with regard to this point that it is impossible to say positively in what part the disease commences, and it may be that, commencing in one locality, it may stop or remit there while the process crops up with fresh activity in some parts far remote.

In all forms of leukæmia two stages can usually be distinguished: 1, that of the prodromata, and the maturation of the leukæmic process in the blood and the organ primarily affected—a stage which shows considerable variation in its length, from a few days to many years; and, 2, a stage of diffusion of the disease to other viscera. In the author's case, the latter was far advanced, and spleen, liver, and glands were enlarged, besides the affection of the bones.

The number of white corpuscles was remarkable, two white to every three red; a larger proportion than the author had ever before seen. They were examined carefully, and their identity with the cells of bone-marrow established; while, at the same time, such cells are only occasionally present in the splenic pulp. A specimen of the blood was examined by Neumann, who agreed to the presence of peculiar large colourless blood-cells, similar to those he had noticed in other cases, in one of which the necropsy showed a markedly puriform appearance of the bone medulla. These cells are probably characteristic of medullary leukæmia, but, seeing that they have been found in the blood of some cases in quantity, and in that of others only occasionally, it is possible that the proportion in which they exist may indicate when the bone affection is the primary or essential disease, when the secondary only, or sequential.

Neumann has also noted, as characteristic of the myelogenous form of leukæmia, the contemporary appearance of nucleated blood-cells in the blood and marrow. He believes that these all offer a means of recognition of this particular variety of disease. Mosler, however, has never succeeded in detecting them in spite of frequent search. The treatment which recommends itself to Mosler as the result of his own practice, and that of numerous others, both

clinical and experimental, is the subcutaneous injection of solutions of carbolic acid, and the internal administration of the drugs before mentioned—oleum eucalypti, piperine, and quinine. Transfusion may occasionally be of use, and faradization in the region of the spleen, as recommended by Botkin (*Die Contractilität der Milz*, Berlin, 1874), and Skorczewski (*Wiener Medizin. Wochenschrift*, 1876, No. 21), has occasionally done good.

[The paper closes with an account of some experiments with the above-named drugs upon dogs; but they are not numerous, and the sources of possible fallacy seem to be so many in the conditions under which they were performed, that, although the spleen became considerably smaller after the administration of the drugs, the reporter does not think they materially strengthen the arguments derived from the clinical study of lukæmia. The latter are by no means strong at present in favour of a primary disease of the medulla of bones, but the question is one for further work, and Mosler's paper is of interest and value in calling attention to the subject.—*Rep.*].—*London Med. Record*, Aug. 15, 1877.

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The Treatment of Diphtheria by Chlorate of Potassa and Iron.

Dr. W. R. Macdonald, Medical Officer of Health, and late Resident Physician of the Ayr Fever Hospital, contributes to the *Medical Times and Gazette* (Oct. 6, 1877), the following report of the success which, in his hands, has resulted from the treatment of diphtheria by chlorate of potash and iron:—

In the month of May, 1868, I was called to see a boy about six years of age, and found him in bed complaining of a slight pain in the throat, headache, and pain in the limbs, with great weakness. His pulse was weak and above 100, his tongue slightly furred, and his appetite gone. On examining the throat, I observed the tonsils congested, and a whitish spot about the size of a threepenny piece on the upper part of the right tonsil. From these symptoms I concluded that I had to deal with a case of diphtheria; and not having any confidence in the ordinary treatment of this disease, I prescribed a mixture which I had previously employed in cases of tonsillitis and scarlatina with very good results, consisting of potass. chlorat. gr. lx., tinct. ferri mur. ʒij., aquæ ʒiv.

Of the mixture I gave a teaspoonful every two hours, with a diet of farinaceous food—eggs, beef tea, and milk, *ad libitum*. On examining the throat, about six hours after, there was no increase in the severity of the symptoms, and I strictly enjoined the continuing of the same treatment during the night. On calling next day, the general symptoms were improved; the spot was no larger, and was thinner in appearance. On the third day the pulse was 96, the tongue cleaner, appetite better, and the spot about half its previous size. On the fourth day I found the patient sitting up in bed; the spot had completely disappeared from the tonsil, and he was complaining of nothing but weakness, from which he steadily and speedily recovered.

Not long after I was called, in consultation with another practitioner, to see a gentleman, whose child had died of diphtheria. His throat was considerably congested, and there was slight pain, with great depression of the system, but no spots on the tonsils. I prescribed the same mixture, and the symptoms at once began to subside; and in three days he was almost quite well. In two weeks one of the daughters of this gentleman was seized with the disease, and I was asked to undertake the treatment. I found her suffering from slight pain in the throat, which was congested, and showed two spots on the right tonsil, and a small one on the left; also headache and pain in the limbs and back, with great depression of the system. The same medicine was prescribed, with a similar diet; and on the fourth day the spots had disappeared, and speedy recovery followed, as in the previous case.

About the same time, a gentleman who had attended the funeral of a child that had died of diphtheria was seized with sore throat, and consulted me. There was considerable congestion of the tonsils, but no spots, so that after a few doses of the medicine the symptoms were allayed and he continued at his employment. Three days after this, when driving on a cold night, he felt a

pain in the throat, and had an attack of shivering. On getting home he took a dose of castor oil on his own responsibility, thinking he had an ordinary cold. During the night I was called to see him, and found him in a very prostrate condition. His pulse was 104, weak; he complained of pain in the head, throat, limbs, and back, and on his congested tonsils there were several characteristic spots. I prescribed the mixture every two hours, but it was taken oftener on account of the relief experienced after each dose. The next day there was still great congestion of the throat, with a tongue slightly swollen and much furred; also slight delirium; but the spots had not increased. Egg-flip, with a few teaspoonfuls of sherry, was prescribed every two hours. On the following day the symptoms were much abated, and the dose of the medicine was gradually reduced, while the recovery progressed as in the other cases. All the family, consisting of five children, took the disease successively, the youngest being nine months old; and all recovered with the same medicine. In a few of the cases I used a local application of a weak solution of nitrate of silver; but I gave this up, and found that they got on quite as well, if not better, without it.

Since the first case described, I have treated sixty-five with this medicine, only one of which had a fatal termination, and this under exceptional circumstances. It was a child about eight months of age, the last of three, two others having just died of diphtheria. The child had the peculiar metallic cough, but no expectoration. There was a discharge from the nostrils, with whitish spots on the throat and pharynx, and difficulty in swallowing. There was some delay in getting the medicine, as the patient resided a good way in the country. Notwithstanding, there was considerable improvement after getting the medicine, and the case progressed favourably for about eight days, the spots disappearing from the throat. On the eighth night, when the bitter blast of January was raging without, the child was placed near the window in its cradle, where it was exposed to a draught of cold air between the window and the fire. Next morning the submaxillary glands were much swollen, and the whitish membrane reappeared on the throat, and seemed to be further down the air-passages. The child became comatose, and died on the third day after the relapse, or the eleventh day after being under treatment.

In most of the cases I prescribe the first three or four doses of this medicine every half hour and every two hours afterwards, till the spots have disappeared from the throat, when it is gradually reduced to a teaspoonful three times a day, at which it is continued till the patient's strength is restored. The depressing and exhausting nature of the diphtheritic poison renders the administration of stimulants and nutritious fluids necessary; of these I have found the best to be sherry and eggs, or brandy and milk, at such intervals as the urgency of the case may require. In medicine, it has been said that the most useful knowledge is the knowledge of what not to do. Be this as it may, it certainly holds good in the treatment of diphtheria, as nothing is more prejudicial than to pursue a wrong course of treatment in this disease. The poison of diphtheria seems to be of so subtle a nature, and to increase in virulence with such marvellous rapidity where the vitality of the system has been lowered, that the exposing of a patient to any depressing cause, or the administration of any depressing medicine, may be sufficient to convert one of the mildest cases of this disease, which might have recovered without any special treatment, into one of such severity as to have a fatal termination. And this remark applies specially to the administration of purgatives, even of the mildest nature—such as castor oil. I have not prescribed purgatives myself, but in cases where they had been employed by others the results were very serious. After the administration of castor oil there has always been increased depression of the system and an aggravation of the disease; while those patients have got on very well whose bowels were left to take care of themselves.

The action of chlorate of potash and iron in diphtheria seems to be both local and general. Locally, it acts as an astringent and disinfectant, causing contraction of the capillaries of the throat, and destroying the life in the diphtheric exudation. Generally, it acts as a stimulant and disinfectant. By giving oxygen and chlorine to the blood it stimulates the vital powers, and destroys

the poison of diphtheria. This is my theory of the action of this medicine, for the discussion of which a more extended space than at present available would be required. Whatever the theory may be, there is no doubt of the rapid and beneficial effects of the preceding treatment in diphtheria.

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A Case of Hydrophobia Cured by Curare Used Subcutaneously.

The following case is given entirely on its own merits, and without venturing on any judgment as to the exact nature of the disease. It is, however, so important in itself that we feel bound to submit it to the judgment of the profession. The narrator is a Dr. Offenburg, belonging to Wickrath, in Rhenish Prussia, and the patient was a country girl, aged twenty-four, belonging to a healthy family. She was bitten by a dog, strongly suspected to have hydrophobia, on July 28, 1874. The wound was burnt with caustic soda, but not until three days after the injury; suppuration was then promoted. She was admitted into Münster Hospital on account of the wound, and with a view to its being healed. One evening, about 8 P. M., eighty days after the bite, some very characteristic respiratory and swallowing spasms occurred quite suddenly on her attempting to drink. About one hour before this some irritability and a tendency to cry had been observed. In the course of the next two hours the whole train of symptoms of ordinary human hydrophobia came on. The spasms, with difficulty of breathing, were repeated about every two minutes; they were especially severe when any attempt to drink water was made, or even at the sight of the glass. She was excited also by light, and there was hyperæsthesia both of the sense of smell and of the skin. She complained of great thirst, and was greatly depressed by the knowledge that she was hopelessly ill with hydrophobia.

After having tried the injection of morphia and inhalations of chloroform without any benefit, it was decided to try full doses of curare, seeing the good results which had been obtained in tetanus. A subcutaneous injection of two centigrammes of curare (about one-third of a grain) in water was administered. This was three hours after the sudden onset of the disease. A quarter of an hour later, there having been no visible effect, the dose was repeated, after which the condition began slightly to improve—that is, there were longer intervals between the spasms, and the muscular movements became less, and finally ceased.

This result induced to a continued trial of the same treatment. The injections were continued, a somewhat larger dose (three centigrammes) being used. They were timed in such a way that an interval sufficiently long between the doses was allowed for the physiological action of the drug, and for any manifestation of the curare-intoxication to be obtained. Thus, at twelve o'clock the third injection was given, and the intervals of spasm became longer. In an hour another injection was ordered, and the intervals again became longer. At the same time the feeling of anxiety and oppression was less intense. A fifth injection was given at 2 A. M., and a sixth at 2.30. The intervals between the spasms now extended to ten minutes, and the pain in the chest and throat was almost gone. Indeed, there was a peculiar condition of hilarity and talkativeness, instead of the previous anxiety. Then the first appearances of loss of voluntary power just began to show themselves. After one more injection (the seventh) at 3.20 the spasms ceased entirely, and symptoms of a general paralysis of all voluntary movements became quickly apparent. The eyelids could only be moved with difficulty; there was difficulty also in speaking. Breathing continued normal; only twice was there any arrest of respiration, and this was overcome easily by making one or two rhythmical movements with the abdominal parietes; the breathing then continued regular. After these toxic effects had lasted with this intensity about two hours, movements again became freer. Some hours after the last injection of curare, it was seen that the dread of water no longer existed, as the girl could drink freely without any difficulty whatever. The sensitiveness to light also disappeared, and indeed all the symptoms of hydrophobia subsided. Thus within four hours and thirty-five

minutes seven injections had been administered, representing altogether nineteen centigrammes of curare. During the course of the next few days, a mixture of symptoms, partly arising from the curare, and partly from the effects of the recent disease, developed. The latter consisted of slight muscular movements and involuntary spasmodic respiratory troubles, which for the most part were produced by the irritation of drinking, or fright, though they occurred spontaneously every now and then. On the evening of the next day but one, some of these symptoms assumed a serious aspect, and another injection of curare was at once ordered, after the administration of which they disappeared. These symptoms, though of much less intensity, continued to recur until the eighth day, after which they finally disappeared.

The girl was discharged cured on December 3 of the same year, and went into service a few weeks later. She is now in perfect health.

Remarks.—The favourable action of curare in human hydrophobia may be explained as follows:—The chief symptom certainly is the frequent spasms. These spasms, which become more violent after each attack, are the cause of the constantly increasing danger of the disease, and they are finally the cause of death, which results either from exhaustion or from acute asphyxia. Curare, unlike other narcotics, does not act directly on the nerve-centres, but seems to act rather on the peripheral nerves. Its chief action seems to consist in paralyzing the motor nerves, and especially (and soonest) those of the voluntary and striped muscles; then, after large doses, those of the involuntary muscles. An animal to which large doses of curare have been administered cannot move about voluntarily, neither can reflex movements be produced. If the motor nerves or even the spinal cord are irritated by a very strong electric current during the action of curare, muscular contractions cannot be produced; the muscles seem to be cut off entirely from the nervous system. The administration of curare in hydrophobia is not new. Niemeyer seems to have been the first to have tried it. He injected in his case five milligrammes, and then one centigramme, at intervals of three or four hours. "This treatment seemed to be of temporary service, and to produce greater relief than very large injections of morphia." Niemeyer strongly urged a further trial of this drug in larger doses in other cases of hydrophobia. No other successful results seem to have been obtained. Gualla has used curare in four cases of hydrophobia, and without success, but it is doubtful whether his doses were large enough. Theoretical arguments, no less than the above case, seem to indicate that the paralyzing effect of curare is necessary to secure success. This case also proves that life may be sustained in spite of general muscular paralysis, the chief effort being, of course, to keep up respiration by artificial means. There is less danger of cardiac paralysis. It is a misfortune that a definite dose of curare cannot be indicated, the doses variously allowed by authors ranging from one milligramme to fifteen centigrammes. The difference depends, probably, on the quality of the drug. Another explanation, however, may be given. The action of curare depends chiefly on the excitability of the nervous system. The greater, then, the excitation and the excitability, and the greater the psychical exaltation, the more violent and intense will be the spasms, and the greater, therefore, must be the amount of the curare to hold these spasms in check. Thus, not only in different cases, but also at different periods in the course of the same case, entirely different doses of the same preparation will be indicated. A dose of curare such as in a healthy individual with a normal nervous system would produce decided effects on the motor powers, would produce scarcely any effect whatever on one who is the subject of hydrophobia. The knowledge of this circumstance is of great importance, and we may commence at once with larger doses than we should probably otherwise employ; yet the difficulties of administering the drug are only partially overcome, especially as we have to administer it until we get paralyzing effects. Obviously the safest way, then, to administer curare is to give small doses, and to repeat them at short intervals until the effects we desire are brought about; and as a subcutaneously injected dose is absorbed and commences to act in a few minutes, and further, as (according to Demme) the action of a dose of curare only lasts from four to five minutes, so then we may most surely and safely obtain the

effects of curare by oft-repeated small injections. Thus, if an injection be practised every half hour—a period of time which largely suffices in order to get the action, and the whole action, of an injected dose of curare—we shall be able within four or five hours to make eight to ten injections. In using curare in this manner, we not only secure its physiological action, but also guard ourselves against any sudden and too energetic manifestation of its toxic qualities. The action of small doses is proportionate both in intensity and duration, and so soon as any dangerous symptoms show themselves we should withhold its further administration, and take precautions suitable to the occasion, as in the case just given. It is of importance to commence this treatment early on in the disease. If the spasms are still slight, very small doses will suffice; if they have become more intense, a corresponding dosage will be indicated. It must be remembered, however, that any possible toxic effect will also be proportionate to the dosage. Nor must it be forgotten that the administration of such a remedy itself produces spasms; the irritation of the injection-puncture may sometimes be so great that the patients will seriously dread it. The various precautions to take, then, and the dosage, will depend on the individual case, and must be left to the discretion of the surgeon in charge.—*Med. Times and Gaz.*, Oct. 6, 1877.

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A Case of Unilateral Chorea with Organic Cerebral Hemianæsthesia and Crossed Amblyopia—Albuminuria.

Dr. RUSSELL, Physician to the Birmingham General Hospital, makes the following interesting remarks (*Med. Times and Gaz.*, Sept. 15, 1877), which were suggested by a case of unilateral chorea occurring in his clinique.

The observations of Charcot, Türck, Landolt, and others, have attached peculiar interest to three elements in the following case—viz., the hemianæsthesia; the impaired vision, in so far as relates to its affecting the entire field in a single eye; and the hemichorea. The source of the interest attaching to these elements is derived from their existing in connection with each other, and from an important question thence arising respecting the special seat of the lesion to which this group of disordered function is to be referred.

The hemianæsthesia conformed to the type furnished by the *hémianesthésie des hystériques* as described by Charcot, but which has also been found to exist, under very special circumstances, in connection with coarse disease of the brain (hemorrhage or softening), and is then distinguished by the same eminent observer by the appellation of *hémianesthésie cérébele organique*, an appellation designed to separate this form of hemianæsthesia from all other forms not recognizing for origin a cerebral lesion properly so-called (*Le Progrès Médical*, August 14, 21, 28, 1875). In the form of anæsthesia in question, at least in the best marked cases, all modes of sensibility are involved, and in the mucous membranes and in the muscles not less than in the outer integument; the external mucous membrane being more or less insensible to contact, and the muscles to contractions excited by faradism; moreover the special senses are alike involved on the same side. In the insensible part, too, some restriction to the freedom of circulation in the smaller vessels appears to exist, as evidenced by the little tendency to bleed after punctures. As regards the visual affection, it is peculiar in this respect, that it affects the entire of one eye, the eye of the side affected by the insensibility (*l'amblyopie croisée*), and is thus distinguished from ordinary homologous hemiopia. This form of amblyopia completes the sensitive defect in the form of hemianæsthesia under consideration; in it, as exemplified by my patient, not only is acuity of vision in the affected eye seriously diminished but the visual field is markedly contracted. A third characteristic has also been described by M. Galezowski, viz., abnormal limitation in the perception of colours—a peculiarity which could not be tested in the subject of the following case.

As is generally known, an interesting discussion has been raised by Charcot, Veyssière, Türck, and others, in connection with this form of hemianæsthesia, and particularly with its relation to the monocular form of impaired vision (*Le*

Progrès Médical, 1875; and Charcot's "Leçons," première série, dixième leçon). This discussion relates to the situation in the brain of the centre for sensory impressions, the part wherein intellectual recognition of sensory impressions is effected; to adopt the language of Dr. Hughlings-Jackson, the part of the hemisphere where the sensori element in the sensori-motor operations of the convolutions predominates over the motor element. The problem, however, is a complex one, as it depends not only on anatomical data as to the seat of lesion in the cases under review—which data are at present very scanty—but also upon other anatomical data concerning the decussation or non-decussation of the nervous fibres in the optic commissure, which themselves depend for their elucidation mainly on the interpretation given to the phenomena presented by such cases as the present one. With respect to the former of these subjects, the well-known observations of Türck, of Vienna, have ascertained that the seat of the lesion in four cases has lain in the superior and external part of the thalamus, in the third part of the lenticular nucleus, and in the posterior part of the internal capsule; and, eliminating the two first-mentioned lesions, as being common to other cases also, Charcot lays stress on the lesion affecting the posterior region of the internal capsule as the essential element, so far as present observation allows of an opinion being formed upon the subject; he regards these fibres, with Meynert, as being centrifugal, serving to transmit sensitive impressions to the posterior region of the hemisphere.

The interpretation of the ocular symptoms, in so far as relates to their affecting the entire of one field, and not presenting the form of hemiopia, depends on the conclusion formed as to the course of the fibres in the chiasma. Accepting the theory of a semi-decussation, M. Charcot lays down the thesis that homologous hemiopia implies the direct or indirect implication of one optic tract; indirect implication covering the details of many cases in which the optic thalamus is involved, by inferring injury or pressure inflicted on the portion of the tract most nearly related to that ganglion. But, with respect to the monocular affection, the *amblyopie croisée* of the cases now under consideration, the suggestion is made that those fibres which do not decussate in the commissure do effect a decussation in a farther part of their course deeper in the brain, thereby conforming with the type presented not only by the decussating fibres of the commissure, but by the other cerebral, and indeed also by the spinal nerves. The part where this decussation takes place is supposed by M. Landolt to lie beyond the corpora geniculata in the posterior part of the thalamus, not far from the corpora quadrigemina (*Le Progrès Médical*, 1875, p. 769).

On this supposition, a lesion of that particular part of the hemisphere may be supposed to produce the crossed amblyopia affecting the entire field of the opposite side; and thus the combination presented by *hemianesthésie cérébrale organique* may be accounted for. It may, however, be added that how satisfactory soever may be this mode of explaining the phenomena so far as anatomical details are concerned, a difficulty would seem to be opposed by the theory of cerebral representation as ordinarily understood, since, so far as the representation of any one organ is subservient to its proper function, we should suppose it would be the homologous halves of each eye which would converge to the perceptive centre, so that the unilateral suppression of conscious sensation as regards the other nerves would have its analogue, so far as vision is concerned, in the associated segments of the two eyes, rather than in the dissociated halves of the single eye.

Passing to the third element in my case, hemichorea, MM. Charcot and Landolt (*Progres Médical*, 1875) have described some cases under the title of *hémichorie post-hémiplegique* in which, after the occurrence of an attack of hemiplegia, peculiar movements have been developed in the affected limbs, without, however, extending to the muscles of the face. These movements are stated to bear considerable resemblance to the rhythmical movement occurring in insular sclerosis, but approximating also to the type of chorea in a certain degree of instability of the affected limbs, when the patient is not performing any voluntary movement. In severe cases the movements may constitute a permanent agitation, in no way differing from the movements of ordinary chorea.

Now, in this condition, as existing in adults, M. Charcot has found the form of hemianæsthesia in all its particulars described above. And thus, from the analogy of clinical details, supported by the results of post-mortem examination in three cases, he believes the lesion peculiar to the cases to be one affecting the posterior part of the foot of the corona radiata, though he is unable to account for the choreic movements otherwise than hypothetically.

M. Charcot has also met with the same combination of motor derangement in cases of partial atrophy of the brain in young children; but here, contrary to what happens in adults, sensation may be unaffected.

The case which has suggested these remarks, although presenting characteristically the form of hemianæsthesia and crossed amblyopia, with choreic movement superadded, yet does not accord with the description just given, as regards the character of the movements, which had no resemblance to those of insular sclerosis, and were, indeed, slight in degree, and altogether subordinate to the motor incoördination of chorea, which constituted the prominent symptom. The face, too, was affected equally with the limbs; and the paresis was present in only a minor degree, and did not precede the other symptoms. But M. Charcot goes on to comment on cases of hemichorea accompanied or not by hemianæsthesia, and not necessarily followed by hemiplegia, to which my case bears a closer resemblance. The disease probably results in these cases from the development of certain neoplasms in the substance of the hemisphere, and he regards it as probable that the seat of the new formation is the same with that of the lesions mentioned in a former part of this paper. He gives a case of a woman subject for five years to indefinite epileptic crises, and for the same period to permanent choreiform "*tremblement*" in the right upper extremity, augmented by voluntary movement. During the last year hemianæsthesia was superadded, but special sensation has since been nearly regained, and also common sensation, excepting in the choreic arm.

By way of bringing the clinical details nearer to my own case, I may refer to a remark by Trousseau ("Lectures," Syd. Soc., i. p. 402), who, in observing that more or less anæsthesia usually accompanies chorea, and is always greatest on the side most convulsed, refers to a patient affected with chorea who presented also a very marked degree of anæsthesia, and who also stated that she could not see very well with her right eye, adding that the weakness of vision had set in since her first attack of chorea a year previously, and had since undergone no amendment. "This impairment of vision," adds M. Trousseau, "which is probably due to paralysis of the retina, has been pointed out by several authors. Dr. G. Sée records an instance of it which fell under his own observation, but he justly adds that the accident is excessively rare."

Case.—E. F., aged twenty-seven, single, a barmaid. She presents no feature of importance in her previous history, save a liability to headaches and much overwork; nor in the history of her family, with the exception that a brother had St. Vitus's dance. Eight days before admission she fell down the cellar-steps, but was not seriously hurt nor much frightened; but on the morning of the next day but one she found herself unable to hold her fork at breakfast on account of choreic movement in her right hand. She was sent out for a walk, but soon afterwards her right leg became affected, and she had difficulty in getting home. She continued to get worse. Soon after the accident she lost the sight of her right eye for ten minutes. The same eye has always been liable "to run water," but I can obtain no evidence of any ocular defect.

When admitted she had characteristic unilateral chorea on the right side, with decided paresis of the right upper extremity; she was quite unable to direct her fingers to pick up a pin, and when placed erect could not direct her right leg to make a single forward step; on the contrary, the limb moved in so irregular a manner as nearly to throw her down. When undisturbed she lay nearly without movement, excepting that her forehead was frequently corrugated on *both sides*, and that *both sides* of the mouth were often in movement, illustrating very forcibly the community of movement, in the bilaterally acting muscles, seen in hemichorea. From the same circumstance—the implication of the muscles of both sides in the trunk—it was almost impossible for her to

rear herself up in bed, although the limbs on the left side were quite unaffected.[1] She had, too, a curious trick of constantly screwing up the lids of her right eye, doubtless from discomfort occasioned by the visual defect. When aroused, choreic movement was developed in the upper extremity. She swallowed well, but speech was decidedly affected; she began each sentence very deliberately, but ended it in rapid speech, articulation becoming at the same time thick and hardly intelligible.

There was very decided anæsthesia on the right side: a pin could be thrust deeply into the arm without exciting any but a slight sensation; and no blood issued from the puncture. The loss of sensation was less complete in the leg. It was also decided in the region of the fifth nerve, and still more so in the other regions of the scalp on the right side. She, however, discriminated correctly between heat and cold, though the sensation was less distinct than on the other side. Electro-sensibility was similarly low: electro-contractility was normal. The mucous membranes of the right cheek, nostril, and eyeball had very low sensibility to contact. Smell, tested by assafœtida and peppermint, was nearly, if not quite, abolished on the right side, and the vapour of ammonia was felt less sensibly than by the opposite nostril; taste to salt and quinine was much less acute on the right side of the tongue; and hearing, both ordinary and perosseal, tested by the tuning-fork, was very dull. Mr. Priestley Smith assisted me in testing vision; as regards acuity the difference between the two was that between 1½ or 2 and 3½ Snellen. There was a very decided peripheral contraction of the field of vision, chiefly laterally on the right side, and an equal contraction in the field for discriminating colours, but her being confined to bed precluded the making of any more exact observations on these points. The fundus oculi was quite normal. She manifested a very marked degree of inertia in doing what she was desired to do for the purposes of examination, and soon became wearied. I have only one record of the comparative temperature of the two sides, the report of a second examination having been mislaid: in that one record there was only a fractional difference. There was no ovarian tenderness; menstruation has been suspended for six months. She has never had a hysterical fit, but during her residence in the hospital the nurse reported on one occasion an attack of excitement with involuntary micturition, inability to speak, and occasional rigidity of limbs; she recovered from the attack very rapidly. At admission there was a large amount of albumen in the urine; there was no œdema. Once or twice it was believed that a faint mitral bruit was audible.

She improved steadily whilst under my notice. The albumen lessened to a trace and then disappeared. At first some variation in the degree of anæsthesia, both absolutely and relatively, took place. The choreic symptoms had disappeared at the last report I had of her, but the field of vision had not extended, and the special senses on the right side were all very imperfect. Common sensation was nearly restored

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On Uræmic Asthma.

Dr. Clifford Allbutt, Physician to the General Infirmary, Leeds, in an interesting article upon this subject (*British Med. Journal*, Sept 22, 1877), speaks of it as one of very great interest to us, both as scientific and as practical physicians. Its phenomena are as striking and strange in themselves as they are inexplicable; and, on the other hand, the affection itself is one of the most agonizing by which mortals are afflicted. I am not sure, indeed, he says, from my own experience, whether the existence of a certain dyspnœa dependent

[1] A rather interesting undesigned confirmation of the truth of Dr. Broadbent's theory as exemplified in unilateral chorea is afforded in an article on Chorea, by M. Jules Simon, in the *Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques*. The author observes that in hemichorea "the nervous disorders are rarely limited in an exact manner. In these cases, apparently limited, it is easy to observe that the muscles of the face and of the head frequently share in the disorders of the limbs, and that the malady tends to disseminate itself on a large number of muscles."

directly upon uræmia, or connected directly, at any rate, with renal disease, is generally recognized by medical practitioners.[1] That persons having renal disease have herewith pulmo-cardiac and pleural affections, mostly of a secondary kind; and that such persons suffer from more or less dyspnœa is, of course, familiar lore. What I mean is, that I do not find it to be by any means familiarly known that the subjects of Bright's disease are liable to definite seizures, mainly consisting in intense dyspnœa, coming and going as ordinary asthma comes and goes, and depending as little as this does upon any permanent disease of the lungs.

First of all, then, I will describe the affection as I understand it, and, in doing so, I will keep to clinical facts as nearly as possible. Uræmic asthma is seen in its simplest and, I think, also in its worst form, in that kind of Bright's disease which is known as chronic granular kidney. It may be seen in any state of uræmia, whether this be dependent upon permanent or transient renal disorder; but, in the subjects of granular kidney, the affection is often very severe and very recurrent, and is often dissociated from pleuritic effusion, valvular disease of the heart, and other permanent causes of dyspnœa. How insidiously granular renal disease, with the constitutional state which belongs to it, or to which it belongs, may creep on is well enough known. For months, or even years, it may betray itself only by some loss of flesh, by some fading of the skin, by unusual fatigue after exertion, and so forth. During this time, vascular tension and cardiac hypertrophy are slowly advancing and establishing themselves unknown, it may be, to any one. One day may then come when such an one has an unpleasant interview with his solicitor, a warning from his doctor, or a quarrel in his home, and that night he is suddenly seized by a dyspnœa so terrible that he has to spring from his bed and strive for his very life, as it seems, for one, two, or three hours before peace brings sleep to his pillow, or rather to his pillows, for never again perhaps will he sleep with less than three or four pillows under his head and shoulders. Not that uræmic asthma always occurs at night any more than epilepsy does; but, like epilepsy, its first attacks are often nocturnal, and often seizes the patient in his sleep. Indeed, throughout the malady, the asthma is more terrible at night, as cardiac dyspnœa generally is likewise; still, in its repetition, uræmic asthma becomes more and more irregular in its recurrence, and finally may not wholly disappear for one hour out of the twenty-four. What happens is something as follows: The patient, if awake, becomes aware that his respirations are quickening and are shallower. The distress increases, and a throbbing labouring action of the heart intensifies it. The countenance now becomes anxious, apprehensive, or even terrified, and a somewhat peculiar general muscular restlessness comes on, which seems to be something more than the mere striving for breath or air. Now, with this intense distress, which anon becomes more than this—an agonizing, almost mortal conflict—the face is not puffed, congested, and blue, but nipped and pale, and the very lips themselves are blanched. This, in my experience, is always the case, and the observation is a very instructive one. Moreover, in many instances, though by no means in all, a more or less profuse sweat is of the essence of the attack,—comes on, that is, with the primary phenomena, and not as a mere consequence of effort or fear. In two cases I remember that an outbreak of perspiration upon the usually harsh skin was the very first symptom in the train of symptoms which constituted the attack. In other cases sweating is unimportant in degree, or is even absent. To the ordinary observer, then, the patient is alarmed, and

[1] Not only in my own intercourse with my brethren do I find doubts or hesitation about this symptom of uræmia, but I find in medical literature that the true nature and importance of these attacks is only recognized in the latest works on the subject. Dr. George Johnson has recently described uræmic asthma in this Journal; and Dr. Dickinson describes it plainly in the new edition of his work. Uræmic asthma is, however, not mentioned in his first edition (1868); and it is referred to very doubtfully by Dr. Roberts in the chapter on Uræmia in his edition of 1872.

his aspect is apprehensive and pallid; he is extremely restless; he sits upright and breathes shallowly and rapidly; he speaks in gasps or makes rapid fretful signs, and not infrequently he is covered with profuse cold perspiration. To these observations the physician will add as follows: The temporal arteries stand out like pulsating cords, the radial and tracheal arteries are of tendinous rigidity, and the blood-stream is forced into these and other arteries under great pressure; the big overwrought heart heaves over a wide area of the left chest and seems to threaten to burst its bonds. There is as yet little or no cough, and but little sound of phlegm in the air-passages. The chest expands duly, and, on listening over the lungs, the air is heard to enter freely and rapidly over the whole of them, unless their capacity be lessened by some previous disease. After this contest has gone on for a longer or shorter time, the attack relaxes its hold, the respirations become easier, words and sentences are spoken, the face recovers some tranquillity, and there is usually some expectoration. This expectoration is frothy mucus, often tinged with blood; and, in one case under my care, every violent attack was followed by distinct pulmonary apoplexy in patches large enough to be mapped out by physical examination. In this case the hæmoptysis was, of course, considerable. In all cases the lungs fill with *râles* before the termination of the attack. Such are the characters of pure uræmic dyspnœa as seen apart from complications.

Let us now ask ourselves what explanation we can find as we sit watching this awful suffering. The first thing that strikes us is, that the condition is not one of cyanosis, but rather of pallor, shrinking, and incipient collapse; it so much resembles an attack of ordinary asthma in these respects, that the name uræmic asthma may properly be given to it. It is on listening to the chest that we find the most remarkable contrast with common asthma, in the perfect permeation of the pulmonary tissue by the inspired air. It is very strange to witness this strife for breath, as it seems, while, at the same time, we hear the air passing freely through the lungs. Indeed, the patient tells us, and we ourselves may see that he is not, as in asthma, unable to draw his breath, but that the drawn breath brings him no relief. It is clear that the air and the blood do not meet in the air-cells, but that the fault does not lie with the air. It must be the blood, then, which does not keep its appointment. Now, in an uncomplicated case, there is no permanent obstruction to the passage of the blood through the lungs; indeed, we know that, in a short time, the air and blood will come again together and the patient will find peace. How is this? Our thoughts now turn to asthma again, and we think of paroxysmal disorders in general, and analogy gradually leads us to suspect that, as in these so in uræmic asthma, the nervous system must in some way be concerned. We are confirmed in this suspicion by the undoubted fact that the paramount causes of the accessions of uræmic asthma—the determining causes, I mean, of the times of their recurrence—are almost wholly of the kind which influence the nervous system. Although locomotion is not without some effect in disturbing respirations, yet, as I have already hinted, perturbation of mind rather than of body is the potent antecedent. In one of the worst cases I ever saw, the attacks were always brought on or greatly aggravated by such kinds of excitement. The needful strain of making his will, the painful visits of dear friends, the annoying visits of business people, or even the reception of more than a very few persons of any kind during the day, were the efficient causes of renewed seizures. On the other hand, perfect tranquillity in one chamber, and the remission of all calls and messages, postponed the attacks more or less completely. Again, one lady who had lost a friend in Bright's disease, and knew, therefore, but too well the meaning of albumen in the urine. She had her first asthma on the night of the day when I had unwittingly revealed to her the same terrible diagnosis of her own case also. In a third case, the first asthmatic seizure came upon a patient in the night of the day on which his partner had selfishly and rudely complained to him of his absence from business; and such instances I need not multiply.

How, then, can such irritations of the central nervous system determine the occurrence of this asthma? Before the Medical Section of this Association,

at the meeting in Sheffield and on previous occasions, I expressed an opinion that mental distress or anxiety is a potent cause of chronic granular kidney.

Can, therefore, the cause which, when protracted, sets up granular kidney be, in its fluctuations, the cause of the asthmatic attacks? I think not. There seems to be a want of explaining hypothesis in this direction. It would seem rather to be some irritation descending directly upon the heart or pulmonary vessels and stopping or hindering the pulmonary circulation in such a manner that the air entering the air-cells finds no blood to meet it. This seems to me, on the whole, to offer a more likely explanation than the humoral hypothesis, namely, that these asthmatic attacks are evidences of efforts of nature to eliminate blood-poison by the pulmonary mucous membrane. We cannot well conceive of nature striving to push out an offensive tenant; the conception would rather be that, under conditions of osmosis, some ingredient of the blood was escaping upon the pulmonary tract. But the auscultatory phenomena do not support this view; they do not suggest asphyxia by infiltration of the air-cells, nor is the aspect of the patient the aspect of pulmonary congestion, with distribution of unaërated blood in the systemic vessels. A more likely hypothesis is, that the transient hindrance to the arrival of the blood at the air-surfaces is in the pulmonary vessels themselves. As the bronchioles, by a spasmodic contraction, prevent, in ordinary asthma, the passage of air to the blood, so it may be imagined that like crisping up of the pulmonary arterioles, on the other hand, in uræmic asthma could prevent the passage of blood to the air, and thus the one disease would be a tolerably precise counterpart of the other.[1]

So far, the hypothesis runs on four legs; but some difficulties still remain. The chief of these is the occurrence of pulmonary hæmorrhage as an integral part of the seizure. This seems to point to a repletion of the pulmonary vessels, and of their relief by bursting or transudation. Moreover, the establishment of some mucous exudation in all cases points in the same direction. Another difficulty lies in the relief often obtained by the use of digitalis. If digitalis contract the blood-vessels, it might rather aggravate than diminish the distress; now it does the reverse. If Dr. Johnson's belief in the opposition between the arterioles and the heart be correct, it may be that the administration of digitalis confirms the heart more than it increases the vascular resistance. If, as some other physiologists believe, the heart and muscular arterioles are consentaneous, the good effects of digitalis would be more easy to comprehend; but the explanation of the attack would be discredited. From this discussion we may pass onward to treatment; for the effects of drugs upon the condition may help us to some assurance of the nature of the complaint.

As the good effects of digitalis are in some degree opposed to my hypothesis of a spasm of the pulmonary arterioles, so again, in its failure, nitrite of amyl offers a like opposition. When I had guessed that the attacks depended upon such spasm, I turned with much hope to this drug and with slight hopes to aconite. From neither of them, however, have I found the least aid.[2] In large and increasing doses of digitalis, on the other hand, I have found a means of permanent alleviation of the condition. By large doses, I mean doses between ten and thirty drops of the tincture repeated under careful observation. The essentially neurótic origin of the attacks points to a like direction of the means of relief, and points correctly; for in nervine sedatives we have most potent means at hand. Unfortunately, it is in chronic nephritis of all diseases that sedatives are least admissible; and, although in this disease sedatives often pass away, leaving the patient unharmed, yet in other cases the lightest

[1] This hypothesis has been proposed by Dr. Dickenson in his edition of 1877 (p. 446), and also by Dr. George Johnson in his lectures recently published in this Journal. Dr. Johnson pursues the comparison with other apnœas, in a very complete and interesting way, as my readers already know. He also offers a likely explanation of my difficulty in understanding the occurrence of pulmonary hæmorrhage.

[2] It appears, as regards nitrite of amyl, others have been more fortunate than I.

doses of them cause serious or even fatal lethargy. The patient who in one week has had a quarter of a grain of morphia injected under his skin without harm, in another week dies of an eighth of a grain in his cough-mixture. Nor have we, so far as I know, any trustworthy guide to the state which permits and the state which forbids the opiates. Strangely enough, opiates by the stomach, with the gradual absorption of which the damaged kidneys would seem more able to compete, appear more harmful than morphia suddenly introduced into the circulation by the skin. To my great surprise, I have repeatedly seen subcutaneous morphia used for the breast-pang sometimes seen in chronic nephritis, as well as in uræmic asthma, without ill effects and with ease so precious that I have not dared to forbid its repetition. In no such case have I happened to see it cause danger, though I have never myself dared to prescribe it. To chloral and the inhalation of chloroform a like objection exists, but these means I do venture carefully to prescribe, and with some success. Bromide of potassium is not strong enough to produce rapid effects; but, in full doses, is much safer than stronger sedatives, and is a valuable adjunct to these. Finally, a few leeches to the sternum are often efficacious in giving some relief to the labouring chest.

To sum up, then, we must use all those well-known means which prevent or diminish uræmia; we must guard the patient from annoyance and even from pleasurable excitement. If, in spite of our care, the attacks recur, we must give a mixture containing, say, twenty minims of tincture of digitalis, thirty or forty grains of bromide of potassium, and ten grains of chloral, with a liberal addition of ether and cardamoms, and we must repeat this after a due interval. If, nevertheless, the attack holds on its course, we may administer a little chloroform upon a handkerchief, so as to relax the spasm and dull the *besoin de respirer*. Perhaps we ought, in extreme cases, to inject a little morphia under the skin; but this I dare not recommend.

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Purulent Pleurisy.

At the meeting of the Paris Medical Society of the Hospitals on July 27th, two communications dealing with the subject of purulent effusions were read. The first was by M. Potain, who introduced a patient whom he had cured by means of the double siphon. This method consists in introducing into the sixth intercostal space two tubes separated from one another by a short interval, so that if a free opening become necessary, it may be made by joining the two apertures by an incision. One tube is then connected with a vessel placed above the level of the patient, containing the fluid with which the pleural cavity is to be washed. The cavity is made, as it were, to wash itself out — the second tube being connected with a receptacle below the bed. It is obvious that the force and quantity of the fluid injected can be varied at will, according to the relative positions of the two vessels. In the case described, M. Potain used a solution of salicylic acid. The patient was a lad fifteen years of age, who was admitted under M. Potain's care three days after the onset of an attack of pleurisy. Paracentesis was performed with the aspirator on December 17th, and nearly two pints of pus evacuated. A second tapping took place on January 16th, and this time the pus was slightly fetid. On the 27th, the signs of effusion being again marked, M. Potain employed the siphon apparatus above described. The temperature rose to 102.5° Fahr., but soon fell to normal. Recovery was retarded by the improvement of the lad's general health being such that he amused himself (according to the report) with removing the tubes. This was followed by a rise of temperature, but eventually recovery ensued from the empyema discharging itself through the lung.

The second communication was by M. Dieulafoy, and dealt with the subject of the transformation of sero-fibrinous into purulent effusions—a mischance so frequently, and, M. Dieulafoy thinks, erroneously, attributed to the operation of paracentesis. After examining microscopically the fluid of pleuritic effusion in twenty-two cases, he has come to the conclusion that the question whether an effusion, simple at first, will become subsequently purulent,

depends upon the proportion of red blood-corpuscles present in it. Every such effusion, however "simple" the form of pleurisy, contains from 1500 to 2000 red corpuscles to a cubic millimetre of fluid, which may not have the slightest tinge of colour. If the fluid contain from 6000 to 7000 corpuscles, it has a slightly red tinge, and is extremely prone to become purulent. In fact, if the figure exceed 2500 to 3000 red corpuscles in the cubic millimetre, it will probably become purulent. But, at the same time, there are pleurisies hemorrhagic throughout which never become converted into empyema. The presence of the blood-elements in every pleuritic effusion points, he thinks, to a stage of engorgement in pleuritis as in pneumonia—a stage of variable duration and date of appearance. It is, of course, unfair to judge of the value of any observations from the brief outline afforded of them in a journal report; but it must be confessed that until further data are given, the statements propounded by M. Dieulafoy should be received with caution.—*Lancet*, Sept. 15, 1877.

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Remarks on the Diagnosis, Course, and Treatment of Cancer of the Stomach.

Professor Rüle, of Bonn, in the course of an interesting article on this subject (*Deutsche Medicinische Wochenschrift*, April 7th) remarks that every experienced physician knows that cancer of the stomach is generally not recognized at all in its commencement, later on, only with uncertainty or more or less probability. The disturbances of gastric function are not prominent, or at least, not characteristic. The feelings of weight, uneasiness, and gnawing are present in other diseases, and vomiting cannot decide the question. Goodsir's sarcinæ are present wherever the contents of the organ are long retained, and even "coffee-grounds" vomiting is not peculiar to cancer. But, taken together with other phenomena, these are of importance, especially the last, and, combined with increasing cachexia, it narrows the range of possibilities, and makes carcinoma very probable. But vomiting of blood, especially copious hæmatemesis, is rare. Ebstein reports a case of Dusch's, in which the stomach and intestine were found after death full of blood, which had come from a carcinoma of the stomach. It cannot be doubted, moreover, that many patients allege that they recollect vomiting blood. Whoever maintained that this symptom does not belong to cancer, would have to regard the disease in such cases as something else; and if a tumour were present, would consider it as the result of perforating ulcer. The chronic recurrent ulcer of the stomach may give rise to very marked thickening of the wall near the pylorus. Besides, the difficulty is increased, when we recollect that ulcer and cancer do not exclude each other; and, too, that cancer may develop in the wall of a cicatrized ulcer. Occasionally one finds, in the centre of a cancerous growth, a distinct, deep, rather firm fibroid round spot, which can be regarded only as a scar of an earlier ulcer.

I saw a case of this kind for the first time when I was assistant in Frerichs's wards. Shortly before a celebrated Russian statesman had died at Warsaw, Schönlein had diagnosed cancer, and had given a bad prognosis; Oppolzer had diagnosed ulcer, with a good prognosis. Dissection showed cancer. We believe our observation explained Oppolzer's mistake as he had been led to diagnose ulcer from the occurrence of early hæmatemesis. But I have seen cases here of patients who undoubtedly suffered from and died of cancer, but who had had hæmatemesis very early so many years before, that it would be contrary to all our experience to think that they then had cancer. Still the gastric troubles had remained ever since, and the patients dated their ill-health from the vomiting of blood. I have never seen cancer produce such copious hæmatemesis as occurs from the rupture or erosion of a large vessel in the epigastrium or its neighborhood; and, apart from ulcer, I know only cirrhosis of the liver, or perhaps rupture of a dilated vein in an over-distended stomach, as rarer causes of hæmatemesis. I once saw a man in All Saints' Hospital who vomited large quantities of blood, yet he could not recall, nor could he discover, anything to throw light upon it. In this case there was a soft shaggy growth in the stomach, which on section, corresponded to Cruveilhier's description, and probably was villous cancer. Hæmatemesis also occurs independently in

purpura or scurvy, and blood from the nose may be swallowed and lead to mistakes. The presence or absence of enlarged lymphatic glands or swelling in the clavicular region is of little significance, as they are often absent in cancer, and present from other causes. The forty years traditionally supposed to be the necessary age, does not help in doubtful cases, as cancer has been shown to occur at twenty. On all these grounds the repeated appearance of "coffee-grounds" vomit in an individual who shows signs of increasing cachexia and gastric derangement is of much significance. Yet when to these always doubtful signs we add the presence of a tumour in the epigastrium error is quite possible, even excusable, or perhaps not to be avoided. Putting aside the difficulties of ascertaining that a tumour in the epigastrium is really connected with the stomach, let us assume that a tumour thus defined has the peculiarities of that hard and nodular condition which we claim for cancer itself, yet the tumour may be only a thickening of the wall of the stomach, resulting from a chronic ulcer, and consisting of inflammatory fibroid growth. Further on I will relate just such a case. On the other hand, a smooth painless tumour of the stomach-wall may be a cancer. About fifteen years ago, at Greifswald, Professor Grohe examined the body of a man who possessed such a tumour, but who had had frequent coffee-grounds vomiting, and who died in rapidly advancing cachexia. At first, no cancer was found. The mucous membrane of the pylorus had disappeared in extensive patches, and instead of it there was a smooth shiny connective tissue growth, and the thickening of the wall of the stomach, in which the muscular wall took part, seemed a so-called simple induration; but between the bands of connective tissue there were some dirty grayish brown patches, like very adherent scabs. These attracted the professor's notice, and microscopical examination showed them to be villous cancer. This case is valuable because it illustrates the diagnostic value of "coffee-grounds" vomiting, and also shows the possibility of cancer becoming eroded and partially healing, for I do not suppose any one will deny that the fibroid patches were formerly the seat of a villous growth. Why, then, should not cases considered as cancer get better, or even recover, although they really are cancer? Thus we have seen that a non-characteristic tumour may be cancer, while, on the other hand, a hard nodulated painful tumour may not be cancerous at all. I will give an example of this.

J. L., sailor, aged 44, was admitted on February 2, 1877. The great strongly-built man was shockingly pale, and so exhausted that he could scarcely walk; his legs and feet were œdematous. He complained of pain and weight in the epigastrium, aggravated at night, and of eight weeks' duration. For the last week he had had vomiting, which was of no special character. Since the appearance of these symptoms, the rapid decrease of strength and the striking pallor had developed. He had no appetite; his bowels were constipated. Inspection of the epigastrium showed visible pulsation, and in this region a large tumour could be felt, which measured six and a half centimetres (two and a half inches) from right to left, and about four centimetres (one and two-third inches) vertically. The surface was uneven, the resistance considerable; pressure was very painful; over the tumour there was a low tympanitic note; the liver evidently limited the tumour; there was no swelling of lymphatic glands. From the appearance of the patient, an increasingly rapid course of the disease was evident, and the tumour of the stomach was spoken of as carcinoma. Shortly before this, Friedreich's well known case of the action of condurango had been published, and this patient received a tablespoonful of the decoction three times a day. This mixture was always procured from the same apothecary, and was used by the patient up to the middle of August. By May 21 he found himself stronger, the anæmia was less, and his appetite was certainly improved. The vomiting had ceased, and his bowels had become regular. The state of the gastric tumour was the same, only it was less tender. By July his appearance was fast becoming normal, his appetite was excellent, his strength improved, so that he was able to bring a heavy boat half a mile up the Rhine. As he felt himself so completely well in August, he discontinued the use of the medicine. The tumour on July 24 was the same as at the beginning. In the winter his condition changed again for the worse, vomiting occurred frequently,

but still without blood. The renewed use of condurango brought only transient relief. His appetite disappeared, and with it his strength, and his general condition became very similar to what it was when he was first seen. As I am informed, the tumour underwent no change. The patient lived at a distance, and did not come to the hospital in the winter. Thirty-six hours before death an urgent call to stool was followed by hæmatemesis. This recurred after twenty-four hours, and death very quickly followed. The dissection showed as follows.

The stomach was considerably dilated; the pyloric end and the smaller curvature were united to the anterior half of the left lobe of the liver. From the liver border downwards, on the anterior surface of the pyloric portion, the serous coat of the stomach was greatly thickened; its surface was uneven and nodular, and this thickening stretched from right to left, to the extent of 3 to 3½ inches; downwards it formed a well marked convex line, the lower half of which was greater than a segment of the greater curvature. To the right the thickening reached to the pylorus; behind it passed as far on the posterior wall as on the anterior. It was there united to the pancreas. The growth involved all the coats, and on the anterior wall was more than 0.4 inch in thickness. The stomach was slit up along the greater curvature. The anterior wall and the attached lobe of the liver being thrown outwards, an extensive loss of substance on the inner surface of the stomach was exposed, which reached saddlewise from the great curvature, along the whole anterior wall, over the smaller curvature and posterior wall to the extent of twelve centimetres (four and three-quarter inches), and measured six centimetres in breadth, being somewhat less on both sides. The floor of this space was smooth, and hard as tendon. The pancreas was exposed on the posterior wall. In it gaped the opening of the ruptured pancreatic artery. The borders were everywhere raised, but at the posterior part the right border of the space was sharply cut, and showed all the coats of the stomach—fibrous, muscular, and serous in their remarkably thickened condition. Cancer-elements were not found in this tumour. There was no swelling or infiltration of the lymphatic glands. All the other organs were intact, and especially were free from new formations.

During life the unchanged condition of the tumour had shaken the diagnosis of carcinoma. The history did not permit us to accept the diagnosis of ulcer. That must have existed long previously. The tumour then could only be the result of an old long-standing chronic inflammatory process, and blood had never been vomited. Finally, death followed the erosion of an artery and hemorrhage into the cavity of the stomach. Dissection showed a large, almost healed loss of substance, with fibroid induration of the wall of the stomach over a considerable extent, and of remarkable thickness. The morbid process cannot be considered carcinomatous in the absence of cancerous elements and secondary carcinomatous affection. The nodular tumour of the stomach, felt during life, was not cancer.

Whilst the history misled us, the observation of the unchangeability of the tumour corrected the mistake, and the fatal hæmatemesis which occurred confirmed the view that it was not cancer; and thus the verdict before death was in harmony with the verdict after dissection. That a tumour of the stomach may be regarded as a cancer, it is necessary to add, as this observation has shown, that its dimensions demonstrably increase. This addition has recently shown its value.

A tumour may be so placed and conditioned that it appears not to be connected with the stomach, and so long as no stomach troubles are present, a diagnosis of the tumour as cancer, still less of cancer of the stomach, is hardly possible.

A large strongly-built man, aged 43, presented himself. He showed no cachexia; his countenance was still ruddy. He complained of pressure in the left hypochondrium, and of frequent desire to pass urine. At the level of the left costal margin a smooth oval transversely lying tumour could be felt, eight centimetres long and five centimetres broad, which could be moved from right to left, and appeared little painful. Appetite was undisturbed; there was no nausea nor vomiting. From this account it seemed probable that the tumour

was a dislocated organ—spleen or kidney. The next week the tumour was changed; it was more extensive. Later it became distinctly larger, rounder, and now began loss of appetite, vomiting, and debility. In the later stages coffee-grounds vomiting appeared, and the patient fell into a marasmic state. Dissection showed that an ulcerating medullary carcinoma of the greater curvature of the stomach, midway between the pylorus and the fundus: from the growth of the tumour, the cachexia, and finally the coffee-grounds vomiting, there was sufficient evidence of carcinoma; but at first the diagnosis of the tumour was hardly to be made.

In concluding these remarks on diagnosis, I may say that there are very rapidly growing cancers of the stomach which, from their consistence, are not to be felt in fat people, or when they are so placed that they are not accessible to the touch.

The course of cancer of the stomach is at present regarded as invariably fatal. So long as this is considered an axiom, every case called cancer, which improves or appears completely cured, must, on that account, be struck out of the list. But is it quite true? I have related a case in which was found a cicatricial process in the mucous membrane, near the remains of a villous cancer, together with an uniform hypertrophy of the wall of the stomach. Moreover, I know an old gentleman who for years presented a tumour at the border of the liver, which was not the gall-bladder, and which gradually atrophied. His father died of cancer. Two years after this tumour was observed, he developed the signs of a dilatation of the stomach, with loss of strength; the hard, very uneven pylorus could be distinctly felt; one could nearly always see the contractions of the stomach run up to this cylindrical mass. There was pyloric constriction; and a palpable nodular lump at the pylorus. There had never been anything observed pointing to ulcer, and the dilatation developed itself with relative rapidity, in an old man of 69. Was it not reasonable for me to give an unfavourable prognosis? But the tumour has gone, the dilatation of the stomach has disappeared (merely by regulated diet), and all symptoms of disease has ceased. And now, three years after the above account, the gentleman is still in active employment, and walks every day to drink his coffee half an hour's distance there and back. What was this lump? It disappeared entirely without medication; domestic remedies even were not used. It was not cancer, because it disappeared. We ask, but what else was it? On that we are silent. Do you regard the tumor in Friedreich's case as not cancer because it disappeared? I have it from Friedreich's own lips that he does not in the least give up the fact. Perhaps I may mention that that case died of cancer a year later; and I ask, does this speak for or against the cancerous nature of the tumour felt by Friedreich himself, and which afterwards disappeared? I believe it speaks for it.

In the course of cancer of the stomach, rupture may occur. I saw a case of rupture into the peritoneal cavity, with so rapid a fatal ending, that peritonitis did not come on. The patient, who had been long affected, and whose cancer was easily recognizable, complained suddenly of a severe stomach-ache and collapse, after twelve hours of pulseless exhaustion. The contents of the stomach, gray, slimy, with remains of food in it, ran into the abdominal cavity. The stomach showed a very extensive carcinoma, which reached from the posterior wall to the pancreas, and near it was found a long sharp rent in the border of the tumour, the stomach itself being empty. At Griefswald I saw another case of a tumour near the abdominal wall, which gradually ulcerated through, and discharged the contents of the stomach for eight days during life; one could pass a probe a long way into the cavity; there was a cancerous gastric fistula.

As it is by exhaustion, apart from such exceptional cases, and its excessive extension to other organs, that cancer generally causes death, there must be something in the formation of cancer itself which acts deleteriously on sanguification and nutrition, if the functional interference with the organs affected do not explain this regular extreme anæmia and cachexia. It is quite likely that in some cases it is to accidental and secondary circumstances that the great loss of strength is due; and I think that at least the different degrees of dilatation of the stomach, which result from pyloric cancer, hasten the falling

off of nutrition. How marked such a hastening may be, I saw three years ago in the case of a woman under the care of a colleague. I found the patient very debilitated, extremely emaciated, with a pyloric cancer, which one could, so to speak, grasp in the hand in its whole extent. The tumour was as large as a medium-sized apple. So great dilatation of the stomach was the consequence that the greater curvature reached to the symphysis pubis, and the stomach was quite full of fluid, the urine being very scanty. The general impression which the state of the patient left on me was, that she could not live longer than a week; the extremities were cold, the radial pulse scarcely perceptible, and the patient hardly able, with great effort, to answer questions. I was of opinion that the carcinoma, as such, had not produced this great exhaustion, and begged my colleague to try the effect of the stomach-pump. This was done, and fourteen days later I learnt the following particulars. After the fourth application of the stomach-pump, the patient felt such an urgent thirst, that in spite of all warnings she drank, in greedy draughts, about one and a half litres of water; soon after she began to perspire, felt more comfortable; her pulse rose, and from that day was dated an improvement in her general condition, with increase of appetite, which pardonably cast doubt on the genuineness of the carcinoma. Then the patient left her bed; she even took walks, and I saw her after five weeks in a strikingly improved condition. But the lump had not disappeared; it was even a little larger, and after five months the patient succumbed to her disease. In this case certainly the high degree of exhaustion was not directly due to the carcinoma. But how shall we explain the sudden change for the better? I propose the following explanation: by the use of the stomach-pump a general hyperæmia of the mucous lining was induced (in what manner remains in the mean time undecided); this produced thirst, the imbibed water was rapidly taken up by the distended vessels, and thus a fluid was introduced into the circulation, which, similarly to water-injections in cholera, stimulated the heart's action; through the energetic contraction of the heart the blood-stream was enlivened and hastened, the basis of a better nutrition of the tissues was created, which now, by further introduction of nutriment, went a stage further, and her strength increased. Although not so rapidly, one sees improvement in the strength of patients who suffer from gastric cancer, occurring in different ways; and with it the course of the disease appears to undergo a favourable change.

The conduct of the patient and the treatment employed have often their share in this result. On this head I might tell you what I think of the use of condurango. I do not doubt that there are active and inactive barks, genuine and spurious drugs; and you must at least ascertain that you use good condurango bark. No one seems yet to have made extracts or tinctures, and Friedreich's macerated decoction (15 to 360, macerate for 12 hours, then evaporate to 180) is employed in tablespoonful doses three or four times a day, and I have always used this formula. Prepared in this way, we get a dark-brown, somewhat turbid fluid, which has very little characteristic taste, and is rather insipid; it might be called slightly bitter and aromatic. I have frequently seen the dispenser furnish a bright-brown clear medicine, which has still less taste, and which appears to have no active properties when used. I have not seen such a result as in Friedreich's case. The case related above, in which a striking improvement in appearance and strength followed the six months' use of condurango, cannot be considered as cancer. Still the influence of the treatment is not the less striking. Although a large pyloric tumour existed, and the enormous loss of strength and appetite must have been due to a disease of the stomach, the appetite returned to a considerable extent, the vomiting ceased, and his appearance, nutrition, and strength returned to their normal condition to an extraordinary degree; and this improvement lasted from March till November. In similar fashion, though in much less degree, many patients improved who were treated with condurango in the summer of 1874. There were seven men, three with cancer of the stomach, two of the liver, one of the rectum, and one of the œsophagus. Of these four ceased to come, because they felt better; and the three others—one with cancer of the stomach, one of the liver, and one of the œsophagus, died under our care. Of the first four, who

were altogether out-patients, we have been able to get no further tidings. The statement of feeling better expressed itself objectively by a gain of a kilogramme in weight and increased appetite; but none of them used condurango longer than seven weeks. Of the three who died, one was the case of cancer of the stomach, the sudden rupture of which I have related. The man had taken the medicine for five weeks only; he considered himself better, and vomited little; but his tumour had changed very little, so far as could be made out at his discharge. The one suffering from cancer of the liver got peritonitis, the cause of which seemed to be injury of the cancer by a round worm. The cancer pressed in one place upon the upper part of the duodenum, and was soldered to its wall. Here there was a little opening, in the neighbourhood of which there was a purulent inflammation, and slimy softening of the liver cancer; in the middle a large round worm was found. The third case showed a medullary carcinoma at the cardiac end of the œsophagus. The cancer had extended to the diaphragm, and had caused extensive disease in the abdominal cavity without any effusion of fluid. In both these two cases the patients felt stronger, and had better appetites after the first week's use of the medicine. It was very important to find out by microscopical examination whether there were any grounds for believing that a retrograde metamorphosis of the cancer, something like a recovery, had commenced. But my colleague, Herr Köster, who had the goodness to make the examination, tells me that he found no trace of anything of the kind. It is true the treatment lasted only a short time, but in the last case the extension of the cancerous infiltration was not at all prevented. If I may add that I have been told repeatedly by out-patients who have used condurango for cancer of the stomach, that the chief symptoms—vomiting, loss of appetite, and the pain itself have abated; that in one case a decided improvement of general health took place, still, these are, perhaps, experiences of the same kind as Riegel gathered from an in-patient of his, and which made him describe the drug as a stomachic in an universal sense. In other cases, Riegel saw no result. Perhaps this may depend on the difference between hospital and domestic care, as the effect of a stomachic depends much upon the nature, choice, and individual considerations of diet. Besides, in private practice the bad quality of the drug itself may often prevent its employment being followed by a favourable result. My colleague, Herr Friedreich, had the goodness to communicate to me the discussion in the Society of Physicians of Würtemberg, which appeared in the *Correspondenz-Blatt* of the 12th of June, 22d of July, and 14th of September, 1876, of which I will only relate that the physicians found a general improvement result, not only in cancer of the stomach, but in chronic catarrh, anæmia, chlorosis, obstinate vomiting, and in cases of convalescence. One maintains that swollen lymphatic glands, which had resisted iodine, soon disappeared under the use of condurango, even those which lay within reach of a cancerous tumour. Nine physicians spoke in favour of the decided therapeutic action of the decoction, but the speeches on the other side are not reported. I will not say anything further about the careful regulation of diet, without which no one can expect any good result in gastric diseases. Of the advantages of emptying the stomach of its contents, of washing out the organ, of Kussmaul's treatment when dilatation is present, Kussmaul himself has already given many examples, and the case related above illustrates it in a remarkable manner.—*London Med. Record*, August 15, 1877.

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An Anomalous Case of Pemphigus.

Professor Neumann, of Vienna, has published (*Wien Med. Jahrbücher*) the following interesting case: In the axilla of a young lady there appeared a few separate pustules, which were somewhat painful. Upon removing the epidermis, the bases of these pustules showed an uneven, furrowed appearance, and showed no inclination to heal up. Very soon afterwards the number of the pustules and excrescences increased, extended to the skin and mucous membrane of the lips, cheeks, pharynx, and assumed a condylomatous appearance. The diagnosis of *syphilis cutanea vegetans* was therefore made. During the

second week that the patient was under observation Professor Neumann had the opportunity of seeing the development of a fresh eruption upon the right upper arm. In the midst of a few small pustules there appeared a blister the size of a walnut, and greatly distended with serous fluid. This soon burst and discharged itself. The base had at first the appearance of an excoriation, but on the sixth day the centre showed elevated excrescences the size of a lentil, resembling *condylomata lata*. These continued to increase in all directions. Similar excrescences developed themselves on the skin of the abdomen, groin, and labia majora, and also upon the mucous membrane of the mouth and pharynx, where they caused great pain and difficulty in swallowing and breathing. Anti-syphilitic treatment was found to be of no avail. Professor Neumann remembered seeing only two similar cases at the Vienna Dermatological Clinic, all of which were fatal. Professor Hebra also saw the patient, and, notwithstanding the fact that no infection could be traced, he made at first sight the same diagnosis of *Framboisia syphilitica* or *syphilis cutanea vegetans*. Continued anti-syphilitic treatment, having proved unsuccessful, was stopped, because the patient became feverish; and now the whole disease underwent a most striking change. The older places alone presented central condylomatous excrescences; the new efflorescences assumed the exact appearance of a pure *Pemphigus vulgaris*. These extended over the skin of the chest, abdomen, and back, and over the mucous membrane of the mouth, nose, and eyelids. After removing the epidermis large sores were found resembling burns of the second degree. Notwithstanding the greatest attention to cleanliness and ventilation, the air of the room in which the patient lay smelt most strongly of ammonia. After the greater part of the skin had become excoriated, the patient was placed in a bath of the temperature of 92°, to which was added a solution of corrosive sublimate. The sore places were also treated with cotton steeped in salicylic acid. The patient, however, gradually wasted, and died four months after the commencement of the disease.

A post-mortem examination was not allowed. The chemical examination of the fluid of the pustules showed a slight amount of urea, but no free ammonia. Microscopic examination of the skin showed an alteration not before observed. In most cases, upon loosening the epidermis, a sore place is seen occasionally covered with a sort of croupous membrane, which in rare cases presents glandular elevations; but in this case were found *protuberances* consisting of a tissue which contained newly-formed and loops of bloodvessels, and in which exudation cells and pigment were seen just as in the cutis, especially at their superior part. These newly-formed tissues were rapidly developed, even in those parts—the axillæ, abdomen, and back—where in the normal state no papillæ exist. They were, therefore, evidently developed not from pre-formed papillæ, but directly from the tissue of the cutis. The development of these excrescences has not been hitherto observed in pemphigus.—*Med. Examiner*, Oct. 4, 1877.

Surgery.

Enucleation of the Eye and Sympathetic Ophthalmia.

Dr. Warlomont, of Brussels, sums up a paper on this subject read at the International Medical Congress, of Geneva, as follows: 1. The sympathetic accidents consequent on injuries of the eye are primary or secondary, the former occurring soon after the injury, and the latter after a more or less long period—of months or years—after the patient has "doubled the Cape" of the early accidents consequent on the traumatic action. 2. When an eye is *destroyed* by a traumatic cause, and all hope is lost of the persistence or return of useful vision, an immense service is rendered to the patient by removing the

eye then and there by enucleation under anæsthetics. He is thus spared the immediate consequences of the traumatism, as ophthalmitis, etc., and is restored at once, so to say, to his occupation in an excellent condition for shortly receiving an artificial eye, which is then worn without inconvenience. He is certainly preserved from consecutive accidents. When there is reason to suppose that the wounded globe contains a foreign body, the indication for enucleation is still more pressing. 3. When an eye, lost from any cause (traumatic or other), or the stump which represents it, becomes the seat of continuous or intermittent sensibility, or the subject of acute or chronic inflammation, or the asylum of a foreign body, or of a crystalline that has become cretaceous.—enucleation is indicated as a preventive means, even when all sympathetic manifestation is absent. 4. Enucleation of a lost eye, even if completely painless, is still indicated if, as is possible even under these conditions, the second eye becomes the seat of symptoms attributable to sympathy.—*Congrès Periodique International des Sciences Médicales, Genève*, 1877, *Programme et Règlement.*

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Chronic Cystitis in Cases of Sacculated Bladder.

The last volume of Translations published by the Parisian Medical Society contains an interesting paper by the president, M. Duchaussoy, on the treatment of chronic cystitis in cases of sacculated and columnar bladder. In cases of this kind the pus often stagnates in the fundus of the bladder, or in the cysts formed on its floor. The surgeon endeavours to clear the bladder by washing it out; yet this often fails. The fluid comes out clear at first, but soon after the withdrawal of the syringe any movement or change of position by the patient may give rise to the evacuation of pus or of muco-pus from the sacculated cavity in which it had been retained. Hence some forms of purulent cystitis are extremely rebellious, and may baffle all our efforts to cure them. In a recent case of this latter kind the author ascertained by means of the catheter, examination per anum, and the manner in which pus was discharged, that a large sac existed in the fundus of the bladder. The obvious indication was to obliterate this sac if possible, and the means which suggested themselves to M. Duchaussoy's mind were forcible injections for the purpose of levelling the vesical wall, and the introduction into the rectum of a small hollow India-rubber plug, somewhat resembling a pessary. On inflating the plug it was hoped that the pressure would assist in emptying the sacs, or even reducing them in size, so as to render them more accessible to injections. Another advantage obtained from the use of the rectal pessary is that it supports the floor of the bladder, and thus resists distension of the vesical walls during efforts at micturition. The action is analogous to that of the accoucheur's hand on the abdomen during labour. Forcible distension of the bladder is very painful, and therefore is not applicable unless the patient has sufficient courage to bear a few moments of acute suffering. The beneficial results, however, are rapidly obtained whenever the patient can bear up for a few minutes. The first effect is to diminish the desire of frequent micturition, and this is no small benefit, for the act has previously been attended by severe pain in the rectum and at the neck of the bladder. The introduction and retention for a short period—an hour or so—of the rectal pessary has not been attended by any serious inconvenience. It raises up the floor of the bladder, prevents the stagnation of pus, and thus assists the action of injection, which latter must form the basis of our treatment. Forcible injection of the bladder may be useful under other circumstances. In reference to M. Duchaussoy's remarks, M. Guillon related a case which he had treated some years previously. The patient was a medical man, from whose bladder he had removed two calculi by lithotrity. Violent pain on micturition, however, persisted after the operation, and it was found that the whole anterior wall of the bladder was covered by an incrustation of calculous matters, from which a few fragments were detached. The patient now made several injections with warm water, so as to distend the walls of the bladder forcibly; the plaster crust gave way in proportion as the bladder enlarged, and the patient was soon completely cured.—*Med. Examiner*, Sept. 20, 1877.

Case of Rare Dislocation of the Hip.

Mr. ARTHUR E. BARKER, Assistant Surgeon to University College Hospital, reports (*Lancet*, Sept. 29, 1877) the subjoined case, the record of which is valuable not only on account of the rarity of the dislocation, but also of some other features of interest which it contains.

A boy aged nine years presented himself as one of my out-patients at University College Hospital on Thursday, April 5, 1877. Coming into the room, he limped slightly, but apparently walked without any pain or much inconvenience. He was ruddy, healthy, and muscular, and had, his mother stated, been running about perfectly well until the preceding Friday. On this day, while at play, he made a spring to ride "pick-a-back" on one of his companions, but, missing his hold, fell. His mother described, almost unasked, the position in which his lower limbs were when he came down to the ground. The right was, according to her, strongly abducted and somewhat flexed, and the left doubled up under him as he fell on his nates. After the fall he felt some pain in the hip, and his mother noticed the following deformity, which was well marked when she brought him to me, and but for which she would not have come, so little distressed did he seem. The first point that caught the attention as the boy stood upright was that the right thigh was strongly abducted, and that in order to bring the foot to the ground he was obliged to tilt the pelvis down towards the right side; besides this, the thigh was slightly flexed on the trunk, and the foot slightly but distinctly everted. The next point that struck me, on removing his clothes, was a flattening of the thigh in the region of the great trochanter, and the obliteration of the fold of the nates; also that the thigh was rigid—*i. e.*, could not be flexed, adducted, or extended.

From the history of the violence, the first thing that suggested itself to me was a dislocation into the thyroid foramen. But although, on laying the boy on his back and comparing the limbs when brought as nearly into the same plane as possible, I found there was an *apparent* lengthening of about an inch and a half, I saw that the pelvis was oblique to about the same extent. Then two careful independent measurements—the first by myself in one room, and the second by one of the house-surgeons, who was not then present, in another subsequently—showed *real* shortening of from a quarter to half an inch in the whole limb from the anterior superior spine of the ilium to the internal malleolus. The thigh could not be brought down on the bed without rotation of the whole pelvis. Again, searching for the position of the head of the bone, it was clearly not in the thyroid foramen or on the pubis. Then examining the buttock while the boy was under chloroform, I had a good opportunity of making out all the parts, and could come to no other conclusion than that the head lay just above the acetabulum, and that the trochanter was drawn backwards towards the sciatic foramen. It should be mentioned, again, that the long adductor of the thigh was very tense before chloroform was given, and that the thigh could neither be brought down from its condition of slight flexion nor inwards from its state of abduction without moving the whole pelvis, nor could it be flexed on the abdomen.

Reserving further comments for the present, I shall now describe the manner in which the dislocation was reduced. The boy being laid on his back on the operating table, I attempted without chloroform to adduct and flex the thigh on the abdomen, the pelvis being fixed by an assistant. This was impossible, owing to muscular resistance. Chloroform was then administered, and I was able, without the slightest exertion, to flex the thigh in the adducted position, and the leg on it; circumduction was then as easily effected, and at the same time rotation of the femur outwards on its own long axis, while the limb was being brought down at the end of the circumduction. It was plain, however, that the bone had not returned to its place. I then immediately made a fresh attempt in precisely the same manner, but without avail. I record these two efforts carefully, not because they were the proper movements to make, but because the fact of their failure tends to add clearness to the diagnosis when we consider the movement that was successful. After a moment's pause I now drew the limb gently downwards in its long axis, and again adducted, flexed,

and then circumducted the thigh as before, downward traction being kept up all the time on the head, but this time rotated the thigh *inwards*. This effort was perfectly successful, but as reduction was effected without the slightest start or jerk of the bone as it returned to the socket, the fact was not apparent for a moment or two, when I noticed that the limb was of its normal length, and now lay flat on the table like its fellow. The usual prominence of the trochanter was now well marked, as also the fold of the nates, and all the motions of the limb were perfectly restored. The obliquity of the pelvis had completely disappeared, and measurement showed the two limbs now equal in length. The trochanter had also come forward again, as indicated by its relation to the apex of the well-known triangle drawn with pen and ink, before any attempt at reduction had been made. After reduction the tip of the trochanter was considerably anterior to the apex of the triangle to which it had previously corresponded.

In commenting on this case I should first like to state that the new position assumed by the dislocated head was not at all clear *to the touch*. But there could be no doubt at all that it was not on any part of the thyroid foramen or pubis proper, for there was no trace of fulness anywhere along the latter. It was also clear that the head was forwards and the trochanter backwards, for the latter could be easily felt near the tuber ischii, and the limb was everted.

Since writing these notes of this case on the day on which I reduced the dislocation, I have considered it in all its bearings with the help of all the books within my reach, and I now believe that the conclusion arrived at then was, in the main, correct, and that the head of the femur was forced directly upwards, and lay just below, and a little outside of, the anterior inferior spinous process of the ilium, and immediately above, or upon, the brim of the acetabulum. I am aware that I spoke of this at the moment as an everted dorsal, which may be considered a misnomer, the term usually applied to this form being the "sub-spinous" (Bigelow) or "sus-cotyloidienne" (Malgaigne). It is, however, a variety of everted dorsal in one sense. (See Busch.)

Writing of this form of displacement ("sub-spinous") Bigelow says: "If thrust directly upwards the bone may lie beneath the Y ligament and the inferior iliac spine; but this displacement requires that the upper part of the capsule should be completely detached from the edge of the socket. The firm bearing of the neck against the Y ligament may then explain *how the patient has in some recorded cases* [here he quotes Malgaigne] *been able to walk immediately after the accident*. The limb is still everted, but less abducted or advanced, and the head of the bone is plainly felt in its new position—*in the absence of which evidence the shortening and eversion might possibly be mistaken for fracture of the neck.*" Now, in my case the boy was able to walk well after the accident for six days, which would have been impossible if the Y ligament was completely torn by the head being thrown further backwards and upwards, as in a very well-marked everted dorsal. There is also an admission in this quotation that the head may not be felt in this position, which is consolatory to me, this having been a great difficulty in the way of my diagnosis. The question of fracture of the neck occurred to me at the time, but I dismissed it, considering the age of the boy, the mode in which the accident occurred, the fact of his being able to walk without pain, and that after reduction there was no crepitus, and the bone resumed its normal condition.

That this "sub-spinous" or "sus-cotyloidienne" is a very rare form of luxation our English text-books amply testify. As a rule, it is not described, but we are told generally that the position of the head of the bone "has been found to range in different instances between the anterior inferior spinous process and the sacro-sciatic notch." (Sir W. Fergusson; see also Bryant and Holmes.) Of foreign writers, Malgaigne was only able to collect five cases in 1855, and these have formed the staple commodity of all later writers (who have copied them from book to book) until Hamilton, of New York, placed one other on record in his work published in 1871. In Malgaigne's work, "Des Fractures et des Luxations," which I consulted recently for the first time, the cases are briefly as follows: One described by Barrier, which, though undoubtedly sub-spinous or sus-cotyloidienne primarily, yet differs somewhat from my case. The

next, in M. Gerdy's practice, died the day following the accident, when much injury about the hip was found. The third, a case treated in St. George's Hospital (*Lancet*, 1840–41, vol. ii. p. 281), although essentially "sub-spinous," differs, I find on carefully reading the original report, materially in the extreme rotation outwards of the limb until the great toe pointed somewhat backward. It also differed in the fact that the patient died shortly after admission, injury unreduced. The fourth is reported by Mr. Wormald in Lond. *Med. Gaz.*, Jan. 1837, and corresponds in every particular with the case now described. I find that in the displacement of the head, the position of the limb, and the fact that the man was able to walk well after the accident, it is precisely the same. But it was unreduced until death. The fifth case was reported by Cruveilhier as only discovered after death, being mistaken for fracture of neck of thigh-bone. Since Malgaigne collected these in 1855, only one case more of "sub-spinous" dislocation appears to have been placed on record—namely, that by Hamilton, as occurring in his own practice. In every particular it appears to correspond to Wormald's and my own case, except in this, that after walking about with the unreduced dislocation for three years, the injury reduced itself during a sudden and violent exertion, when "at once the complete functions of the joint were restored," and that three months later, owing to a sudden wrench, the head again slipped out as before, after which he would not allow any attempt to be made at reduction.

Here, then, it would appear, we have the only six cases of "sub-spinous" dislocations yet placed on record, to which I now add a seventh. I have searched carefully for others, but cannot find them. My friend and former teacher, Prof. Busch, of Bonn, who has given much attention to the subject of luxations, and whose book is now before me, also describes this form as very rare, although as far as pubic dislocations go he has had four in his own practice. He, too, is obliged to go to the cases collected by Malgaigne. Among the other German observers I have looked in vain for any information on the point in Volkmann's "Neue Beitr. z. Path. u. Therap. d. Krank. d. Bewegungsorgane," and in Von Pitha and Billroth's "Handbuch d. Allg. u. Spec. Chirurgie" (a representative book). In Cooper's Surgical Dictionary also only the same stock cases are alluded to. Bigelow, too, is obliged to refer to Malgaigne for an instance of this form of dislocation, and quotes Wormald's case cited by him, not having seen anything of the kind himself. From the fact that these few cases are handed freely about from one great authority to another an impression appears to have arisen that this "sub-spinous" dislocation is, on the whole, not so extremely rare. Indeed, the familiar way it is referred to in the works quoted justifies this conclusion of the general reader. Of course other cases may have been seen, but they do not appear to have been recorded anywhere, which is a matter for regret if they have occurred.

In conclusion I am much interested in finding that in the cases of Barrier and of Gerdy—the only two out of the six hitherto recorded in which reduction was effected by surgical aid—the means successful in their hands were precisely those which succeeded in mine in replacing the head of the bone, as will be seen from the following quotation from Malgaigne: "La réduction pourrait être lentée sans doute par l'extension direct; cependant M. Barrier l'a essayée en vain. C'est par la flexion, jointe à l'adduction et à la rotation *en dedans*, qu'il reporta la tête dans sa cavité; la flexion, unie à la pression exercée d'avant en arrière sur la tête fémorale, avait réussi de même à M. Gerdy."

It may also be worth noticing that, if we include a doubtful instance alluded to by Malgaigne as described by Palletta in 1781, out of these eight cases of "sub-spinous" or sus-cotyloidienne luxation, three were in children. Mr. Wormald's was a boy of fourteen years; Palletta's a child of twelve years; this last now recorded a boy of nine years.

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Resection of the Knee-Joint with Cross-Section of the Patella.

During the last three years, Prof. R. VOLKMANN, of Halle (*Deutsche Med. Wochenschrift*, Aug. 18), has performed resection of the knee-joint twenty-one times, with the loss of only one patient, who died of acute basilar meningitis,

three weeks after the operation. In all of these cases, nevertheless, the operation was a particularly severe one, for in all of them it was considered advisable to extirpate the capsule *in toto*. In the more favourable cases the wound healed completely and permanently, without any fistulæ or drainage openings, in from sixteen to twenty-one days, and even in the most unpromising cases the process of cicatrization was, as a rule, considerably shorter than is usual. Prof. Volkmann now combines extirpation of the capsule with resection of the bones in all the joints whenever there is marked fungous degeneration of the capsule or pronounced tuberculosis of the joint. After resection of the hip-joint he has repeatedly seen the wound permanently closed at the expiration of six or eight days, and three weeks after the operation some of the patients were able to walk about with the Wolf-Taylor apparatus, and to leave the hospital. In all his cases the strict antiseptic treatment was employed.

For the total extirpation of the capsule a somewhat larger incision of the soft parts is required than would otherwise be necessary. The usual longitudinal incision, however, answers well enough for the shoulder, elbow, and hip-joints. For the knee-joint Langenbeck's longitudinal, arched incision is better than the H-shaped or the curved incision across the joint, because it leaves the quadriceps extensor tendon intact, but it does not give sufficiently free access to the joint. To secure both the advantages, Prof. Volkmann proposes to make a horizontal incision across the joint, and to divide the patella with a saw into two halves, which are to be united by catgut sutures at the end of the operation. He has already operated four times by this method, and in all four cases the wounds healed by first intention, and the two halves of the patella have united so perfectly that no furrow or ridge can be discovered by palpation. He found that this plan gave him freer access to the joint than could be obtained by any other method, while at the same time the incision was not as extensive as the longitudinal or U-shaped incision. In one case the patella was perfectly firm fourteen days after the operation.

The incision extends horizontally across the patella from the anterior border of the epicondyle on one side to the anterior border of the epicondyle on the other side. The joint is opened on both sides of the patella and the index finger passed under the bone, which is then divided with the saw or knife. The lower half of the patella is now drawn downwards and secured out of the way, while the lateral and crucial ligaments are divided and the end of the femur resected. The head of the tibia is next pressed forward into the wound, and the semilunar cartilages are seized at their posterior borders and removed along with the remains of the crucial ligaments, and the greater part of the adipose tissue which covers the posterior surface of the ligamentum patellæ. The head of the tibia is then laid bare and resected, the capsule is dissected out, and any curious spots in the resected bones or in the patella are gouged out. Finally the resected surfaces of the femur and tibia are brought together by two strong catgut sutures placed internally, and the two halves of the patella are united also by two catgut sutures. The sutures are introduced into both the epiphyses and the patella by means of strong curved needles. The operation should always be preceded by an exploratory incision, which will enable the surgeon to examine the joint by both finger and eye; for this purpose the incision should at first only be carried from the epicondyle as far as the border of the patella. If this explanatory incision shows that the operation can possibly be avoided, a drainage tube should be introduced and the wound dressed antiseptically. The patella will sometimes be found firmly attached to the femur, but it can be easily separated with the chisel.—***Med. Record***, Oct. 20, 1877.

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Compound Separation of the Lower Epiphysis of the Tibia, with Fracture of the Fibula.

At a late meeting of the Norfolk District Medical Society Dr. STEPHEN C. MARTIN read (*Boston Med. and Surg. Journ.*, Sept. 27, 1877) the following report of a case of compound separation of the lower epiphysis of the tibia, with fracture of the fibula. He remarked that, in a discusssion which took place

in the Société de Chirurgie of Paris on the subject of the Separation of the Epiphyses, reported in the Biennial Retrospect of the New Sydenham Society for 1865–1866, the opinion was very generally expressed that such a thing did not occur; but that in every instance a portion of the shaft was attached to the epiphysis, so that the case was really a fracture. M. Broca, however, reminded the society that the injury could easily be produced in the dead subject, and therefore was very probably more frequent in the living than was supposed. Separation of the lower epiphysis of the tibia is certainly a very rare accident. Prof. R. W. Smith, of Dublin, in his address on Surgery, printed in the *British Medical Journal*, August 17, 1867, says that, so far as he knows, there is no published authentic example of it except one which he put on record in 1860. This was a case which was not seen by him until six months after the accident. Professor Smith had, however, overlooked a description by Holmes of a specimen in St. George's Hospital Museum. This was the case of a young man of eighteen, whose leg was caught in a rope on board ship, and had to be amputated for rupture of the popliteal artery. The specimen presents separation of the lower epiphyses of both the femur and tibia, a small portion of shaft being attached in both instances; also separation of both epiphyses of the fibula. This last is somewhat doubtful from the fact that the bones had been macerated. The specimen is figured in Holme's work on Surgical Treatment of Children's Diseases. This extreme rarity of the lesion induced him (Dr. Martin) to present the following case:—

The patient, a healthy German lad, aged eleven, in sliding down from the top of a telegraph pole, on the afternoon of November 19, 1876, lost his hold when about half-way down, and fell violently to the ground. He was taken up by some passers-by and conveyed home in a carriage. On my visiting him an hour after the accident, I found that the distal end of the shaft of the tibia had been separated from the epiphysis and was protruding through the integument. It had been thrust into the hard, frozen earth, friction with which had stripped the periosteal covering of the bone from its entire external surface for the space of at least one and three-fourths inches. The peculiar stellate radiations of the extremity of the shaft, where it joins the epiphysis, were found to be perfect, when the dirt which had been packed into them had been removed. The entire surface at the end of the shaft was plainly in sight, so that a most thorough examination could be made. It was found that no portion whatever of the shaft was broken off, but that the case was one of separation of the epiphysis purely.

There was also a fracture of the fibula about four inches from its lower extremity.

It was found necessary to enlarge the wound considerably, and afterwards to use a good deal of force to accomplish reduction. To the outside of the leg a piece of prepared felt, softened in hot water, and of sufficient length to extend from the knee to the sole of the foot, was applied. This almost immediately formed a firm and perfectly adapted case for that side of the limb, and was merely tied on by three or four strips of bandage. The leg was laid, in Pott's manner, on its outside upon a pillow, the knee being bent at a proper angle. There was no hemorrhage beyond a very slight oozing from the bone, which was at once controlled by placing the foot in a slightly elevated position. The wound was closed with a compress of wet lint and a few turns of bandage.

The next morning, on visiting the patient, I found that there had been much hemorrhage. On removing the dressings the wound was found to be distended with soft coagula. When these were cleared away it was seen that from the entire denuded surface of bone venous blood was oozing very freely. The foot was elevated, ice and afterwards graduated compress applied, but with little or no effect. The bleeding was so profuse and had been so great that its much longer continuance threatened even the life of the patient. Under these circumstances I was advised by my father, Dr. H. A. Martin, to dust the surface of the bone with powdered subsulphate of iron and to fill the wound with lint, outside of which a compress soaked in cold water was applied. On visiting him that evening I found that there had been hardly any bleeding since these measures had been taken. The next morning the lint was removed and the

wound washed out. The wound looked well, and a crust formed by the union of the subsulphate of iron and blood covered and protected the bone. There had been delirium during the night, which lasted some little time longer, about twenty-four hours in all, and disappeared upon action of the bowels. For the next three days a little salicylic acid was sprinkled upon the wound at each dressing. From the end of that time (November 25) to December 2, a bag of dry earth, with a dressing of salicylic acid, was laid upon the wound, a fresh one being prepared at each visit. After that an ointment containing carbolic acid and simple cerate was used till the wound was healed. Up to November 26 the uncovered surface of the bone looked perfectly dead, and I supposed would eventually entirely exfoliate, but at that date it began to assume a rosy hue, which gradually deepened until December 9, when granulations were thrown out by the bone over its entire surface. On the 8th of December the splint was removed, and thereafter the leg was simply laid upon a pillow, with tarred oakum underneath to catch the discharge, and the wound dressed with the carbolic-acid ointment and oakum. From that time the wound quickly filled up with granulations and cicatrized. Three very small pieces of bone worked up through the granulations to the surface. In two months from the time of the injury the boy was about as usual.

Dr. Henry A. Martin said that he wished to add a few words to the narrative of the very rare case just read, in regard to the use of powdered subsulphate of iron as a hæmostatic applied to denuded bone. As he had reason to know that such use of this salt is disapproved by very eminent Boston authority, even in hemorrhage from wounds which do not involve the bones, and, where bleeding is from denuded bone, is by the same authority considered extremely improper and unsafe, he wished to take the entire responsibility of having advised its use in this instance. In this case he would very gladly have avoided the use of any hæmostatic drug, but the hemorrhage was so profuse and so entirely beyond control by other means that he had no choice. If, however, he had any faith in the doctrine of danger from its use he should not have advised the subsulphate. The notion on which the unfavourable opinion of the subsulphate of iron is founded seems to be that it is a caustic, destructive of living tissues, and particularly of bone. He had never seen anything in its quite frequent use which would lead him to agree in this opinion. On the contrary, it had seemed to him eminently conservative of wounded tissues, and it is so, because, combining with blood and dead tissue, it forms a peculiarly firm adherent crust or scab, under which nature's processes of repair go on most perfectly. He had never observed anything like injury to living tissue from the action of the subsulphate, but, on the other hand, the most decisive evidence that no such injury ever occurs.

It would not be easy to find a case better calculated to make manifest the injurious effects alluded to than that which you have just heard narrated—a large surface of bone entirely bare of periosteum, and a separation of the epiphysis into which the dissolved salt could easily find entrance. There certainly was no injury to the bone from a very free application of this supposed destructive agent, for on the seventh day, from being white as ivory and apparently dead, it became of a rosy pink, and was very soon covered with a full coat of healthy florid granulations. Instead of a large exfoliation of bone, which might have been looked for, all that appeared were two or three insignificant little particles. One would almost think that a directly favourable effect on the vitality of the bone had followed the application. There certainly was no injurious effect whatever. It may be said that the boy escaped, not on account of the treatment, but in spite of it. Such is a common style of criticism, but it will not answer here. If the action of the subsulphate of iron upon denuded bone is destructive, it is as a chemical agent, and if in one case then in all. He did not believe it to be bad practice to apply the subsulphate of iron to wounds, venous bleeding from which cannot be arrested by simpler means, even if such wounds expose whole or fractured bone; for pure subsulphate of iron is not, in any way, a caustic destructive of living tissue, but an admirable antiseptic hæmostatic, preventing, as such, an entire loss of vitality in wounded and bruised tissues by their being entirely drained of the blood on which their

nourishment depends, and also by its formation by union with blood, etc., of a firm and peculiarly antiseptic covering, under which injured tissue regains its full vitality, and lost tissue is repaired.

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Treatment of Dissevered Fingers with Carbolized Collodion.

Dr. KARL FRANZ, in the *Memorabilien*, September 14, 1877, says that he recently had a case in which a horse had bitten a coachman's finger, severing the third joint so that the portion of finger was barely hanging by the epidermis, one millimeter in width, and that he feared almost to touch it lest it should drop off. The wound was washed with cold water and then carbolized water, the edges were brought in close apposition and thoroughly varnished over with a ten per cent. solution of carbolic acid in collodion. Afterward the entire finger was bound up in a pasteboard splint and cotton. The wound gave him no pain.

Twenty-four hours after this the end of the finger was examined. It was pale, and pricking with a pin was not felt. It remained in this condition twenty-four hours, and then I took off the bandage and washed the finger, and found that the parts had adhered very well. Upon pressure with a pin the end of the finger changed its color from an already somewhat reddish to a pale hue, which, upon cessation of the pressure, again became reddened, as is observed in a healthy person. It was evident the circulation had been re-established, but sensation had only partially returned on the ninth day. By the twelfth day the finger was sensitive to the end of it, but motion was not yet possible. By the twenty-first day feeling had returned to all parts of the finger, and the man could use it a little, and strong pressure did not give him pain.

The length of time Dr. F. leaves the above dressing on is from four to eight days, if the patient remains satisfied.

Another case almost similar to the above is narrated, with a good result, in which the patient's little finger was cut off, with the exception of a shred of skin.

Also a case is reported where a miner had received a burn of the entire face, hands, and forearms, and both feet to the middle of the thighs. The burns were of the first and second degree. The carbolized collodion was tried on his face. The varnish caused the patient no pain at all. On the contrary, the evaporation of the ether cooled the burning sensation. The swelling of the face, which in burns of a similar character occurs to so great an extent that the victim can scarcely be recognized, was here very insignificant, and only continued a short time. The painting was repeated once, and the face was left uncovered. Over the other burns I placed lint saturated with ol. oliv., with aq. calcis and a ten per cent. solution of acid carbol., the result being very good.—*Am. Practitioner*, Oct. 1877.

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On Nerve-stretching as a Surgical Operation.

There are few subjects in surgery of greater importance than the one now under consideration. Nerve-stretching is not new as a proceeding, but its application as a surgical operation only dates as recently as 1872. Dr. Paul Vogt,[1] Professor of Surgery in the University of Griefswald, has the merit of writing the first systematic book on the subject, and it is our intention to give a short summary of what it contains.

It is divided into five chapters. The first gives some physiological and anatomical researches on the effect of nerve-stretching under normal circumstances. The second treats of the effect of nerve-stretching under pathological conditions. Chapter III. collects all the cases which have hitherto been published, with the clinical results. Chapter IV. enters into the indications for the operation; while the last chapter summarizes the topographical

[1] Die Nerven-Dehnung, als Operation in der chirurgischen Praxis." Leipzig: Vogel. 1877. Pp. 80.

anatomy, and shows the points at which the chief nerves may best be exposed and got at.

I. Physiological and anatomical experiments on the action of nerve-stretching under *normal conditions*. Though numberless experiments on the action of the most varied physical and chemical agents on the function of the nerves have been made, yet that of stretching has been almost left out of consideration; and this is the more strange, because very various degrees of, and alterations in, the tension of nerves must occur during the constant changes of position which the body assumes within the normal limits. The first experiments were made by Harless and Haber (1858), but it was Valentin who, in 1864, published the first detailed researches on this subject. He arrived at the following conclusions:—

1. Stretching lengthens the primitive fasciculi, and decreases their calibre, and the nerve-sheaths press upon the medullary substance. Electric excitability is not much interfered with, provided the stretching be not too considerable.

2. If the stretching has not been carried too far, a nerve will quickly recover itself. The time required for recovery is in direct ratio to the weight applied, and the length of time during which it was applied. If the stretching has been carried to such a point that no further excitability can be produced, it may, nevertheless, recover perfectly after a sufficient period of rest.

3. The microscopic examination of nerves which have been stretched to their uttermost fails, as a rule, to discover anything abnormal, except that the medullary substance seems in places to be separated from the nerve-sheath just where rupture of the sheath seemed to be commencing.

4. The electro-motor qualities of the medullary substance become changed under the influence of powerful mechanical action. Tutschek's and Conrad's experiments have since confirmed Valentin's; and it may therefore be laid down that "the excitability of a nerve-trunk, and the reflex excitability in the parts supplied by it, are lowered by any prolonged stretching." The manner in which this change is brought about does not appear, but it is in one of three ways—the stretching either acts on the nerve as a conductor, or on the central organ, or on the terminal organ. As regards the first of these three ways: The median nerve of a male subject, 50 centimetres long, extending from the wrist to the axilla, is fixed at one end, while to the other a weight is attached; 3 kilogrammes suffice to increase its length by 2 centimetres, and an increase in length of 3 centimetres can only be obtained by the greatest amount of stretching that can be applied by the hand. After several weightings with 2 or 3 kilogrammes, the nerve retracted again to its normal length; and after repeated and long-continued trials, a permanent lengthening of 0.2 centimetre only was obtained. The elasticity decreases from the central towards the peripheral extremity. Again, if an amputation of the thigh of a dead body be made, so that everything is divided except the sciatic nerve, and if the leg, weighted with 30 kilogrammes, be allowed to hang supported only by the nerve, the distance between the upper and lower cut surfaces will increase to 10 centimetres. This, however, is not all to be put down to the elasticity of the nerve, but rather to the rupture of some of its attachments to the muscles of the leg. If the lower extremity of a dead body be forcibly flexed on the abdomen with the leg extended, it is impossible to produce any extension of the peroneal nerve, previously exposed, behind the head of the fibula; neither can any extension of the sciatic be produced under similar circumstances. If any great force be used, there is rupture rather than yielding of the nerve. The same applies to the upper extremity. The head being turned towards the left, the right arm extended and abducted, with the forearm and hand extended, it is impossible to produce any stretching in either the median nerve or in the brachial plexus. Hence we are to conclude "that the nerve is only elastic and stretchable within certain limits. The limits of the normal elasticity correspond with the physiological limits of the motions of the human body. Any attempts to stretch nerves beyond these limits are followed by rupture in their continuity." Thus, in replying to the first question, whether the mechanical action of nerve-stretching acts on the conducting power of a

nerve, we are bound to conclude that as we cannot get beyond the physiological limit of nerve-elasticity without loss of continuity in the nerve, so we cannot alter the conducting power of a nerve within those limits.

Then, as regards the second point—the effects of nerve-stretching on the central organ—the less elastic a nerve is, the more likely will stretching it be to act on its points of attachment. In order to test this, the sciatic nerve of a full-grown goat was laid bare between the tuber ischii and the trochanter, and then its attachment to the spinal cord was also laid bare. The nerve-trunk was then seized by the finger, and strong traction was made, but not the slightest participation of the stretching could be appreciated at its junction with the spinal cord—not even when a traction was made which finally resulted in rupture of the nerve-trunk. Other and similar experiments were made, and as the result it may be laid down "that in the simple laying bare and stretching of a spinal nerve the traction is not conveyed to the central organ."

We now come to the last proposition—the effect of nerve-stretching on the peripheral terminal organ. If a small opening, three centimetres square, be made on the flexor surface of the forearm just above the wrist, so as to expose the median nerve; and then, with the arm hanging down by the side, if the brachial plexus be laid bare, and traction exercised on the median nerve, the latter will be seen at the opening to undergo considerable displacement outwards. The same can be stated of both the radial and ulnar nerves on making suitable openings over each. Hence, then, the centripetal stretching of a nerve-stem is conveyed to its peripheral termination, and may thus act on the parts which it supplies.

It only now remains to point out in what this alteration consists. It may be summed up as follows: The stretching of a nerve-trunk is followed chiefly by a displacement and loosening of its attachments within its surroundings, both in a central and peripheral direction, and by a simultaneous stretching and displacement of the bloodvessels running within the nerve-sheath. This latter effect, as seen in the injected nerves, is indicated by the tortuosity and marked dilatation of the vessels supplying the nerves, while an altered condition of the vessels within the nerve-trunk does not seem to take place. Further, these changes may be observed immediately after the operation, and also for some considerable time subsequently to it. The effect thus produced, then, may be called neurolysis and neurokinesis, instead of neurotony, which means simply nerve-stretching.

Thus, if the activity of a nerve, according to the experiments of Harless, depend on the pressure exercised by its sheath, it must necessarily follow that a change in the function will temporarily follow on the stretching and the displacement which has been shown to take place. And, further, if we are to suppose that the activity is also dependent on the nutrition of a nerve, then the conditions of nutrient arteries of the nerve will come into considerable play. A dilatation and tortuosity will be brought about by this stretching, which in its turn will lead to a slowing of the blood-current, a diminution in the blood-pressure and in the chemical changes which go on in the nerve-trunk. And with every alteration in the tissue metamorphosis, comes an alteration of function. Thus we get two factors, which are probably more important than the "concussion of nerve-substance and nerve-cells," which have hitherto been made so much of.

II. The author next proceeds to discuss the action of nerve-stretching under *pathological conditions*. In order to be able rightly to understand this action on diseased nerves, we ought to be well acquainted with the appearances which nerves present under varying circumstances, and unfortunately we know very little about the subject. The author, though he has often made experiments, has never succeeded in artificially producing what is called neuralgia or tetanus in animals. At most a little local neuritis seems to have been caused, which subsided again, but which, after nerve-stretching, appeared to heal still more quickly than when left to itself. There is another field for observation on this subject, and as a more extended knowledge of neuropathy would be of material service, the study ought to be warmly taken up.

III. Record of published cases in which the operation has been performed, with date:—

a. Billroth (operation 1869, published in 1872): Laying bare the sciatic nerve, and examining it with the finger. Nothing abnormal was detected. The spasm of the leg, for which the operation had been undertaken, completely ceased within three months of the operation.

b. Von Nussbaum (operation 1872):[1] Laying bare and stretching the brachial plexus, on account of an intense neuralgia, of spasmodic contractions, and loss of sensation of the muscles of the arm. This operation was most completely successful.

c. Gärtner (1872): Laying bare and stretching the brachial plexus for a paralysis of thirty-four years' standing. The arm was greatly wasted, and the fingers contracted.

d. Patruban (1872): Laying bare and stretching of the sciatic nerve for sciatica. Great amelioration.

e. Vogt (1874): Laying bare and stretching of the ulnar nerve for paralysis, in consequence of adhesions with nerve. Cured.

f. Von Nussbaum (1875): Laying bare and stretching of the tibial and peroneal nerves in a case of reflex epilepsy. Complete cure.

g. Callender (1875): Laying bare and stretching of the median nerve in the stump of a forearm on account of neuralgia. Cured.

h. Von Nussbaum (1876): Laying bare and stretching the sciatic and crural nerves of both sides for central disease. Paralysis of lower extremities with clonic spasms, following on a fall eleven years ago. Spasm entirely cured.

i. Vogt (1876): Laying bare and stretching the brachial plexus in traumatic tetanus following extensive injury to the hand. Cured.

k. Kocher (1876): Laying bare and stretching of the tibial nerve for traumatic tetanus.

l. Petersen (1876): Laying bare and stretching of the tibial nerve for neuralgia.

m. Vogt (1876): Laying bare and stretching of the inferior dental for neuralgia. Cured.

Though the number of cases thus far is small, the results of the operation are striking. In these cases there was one symptom common to all, viz., the abnormally *increased excitability* of either the sensory or motor tracts, and the result of the operation in each case was to lessen it. A closer inspection of the cases showed, first, changes in the neighbourhood of the nerves acting as a mechanical irritant, which were removable by the exposure of the nerve-trunks simply; and, secondly, changes in the nutrition of the nerves manifesting themselves as neuralgia, for which the nerve-stretching was especially indicated.

To the above list of published cases the author now adds *three* of his own. *The operation was undertaken each time for tetanus, and in two of the three cases the patients recovered.*

IV. If any justification of the operation were necessary, the cases just quoted might be appealed to; and, further, the old maxim, "*Remedium anceps melius quam nullum*," would more than call for it. When it is compared, however, with the only other operative procedure which is open to the surgeon, it stands out in prominent and favourable contrast; for neurotomy or neurectomy, hitherto employed, brings about its mechanical interruption in nerve-conduction by means of *solution of continuity*. On this account, therefore, the operation has, for the most part, only been applied to *sensory* nerves; for division of a motor nerve would be followed by immediate paralysis of muscles or even limbs supplied by such nerve—a sequence by no means desirable. Further, the disease may be either central or peripheral, and division of the nerve under any circumstances could scarcely affect a central cause, and hence, in many cases, would even be contra-indicated.

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[1] This is the first *published* case.

There are, at present, some definite indications for this operation, and the author lays them down somewhat as follows:—

A. *In Neuralgia.*—If it be generally true that secondary changes take place in a nerve-centre as the result of a peripheral irritation, which, in its turn, leads to an alteration in the vaso-motor district, and then to trophic changes in the nerve itself, we can easily understand why simple neurotomy is so seldom followed by good or permanent results. And after what has been said as to the supposed *modus operandi* of nerve-stretching, it will be conceded that the latter operation is the more likely to be of benefit, either in combination with neurotomy or alone.

1. Nerve-stretching in combination with neurotomy. When we have to deal with a neuralgia of peripheral origin affecting a purely *sensory* nerve, and one which has resisted all previous treatment, and which we cannot influence by electro-therapeutical means, a case in which no special local measures are indicated (removal of a scar, foreign body, or morbid growth), *then neurotomy of the affected nerve, in combination with simultaneous stretching, both centripetally and centrifugally, is indicated.* By means of this combination we dispose of the peripheral irritation, or at least we get an interruption of communication with the nervous centre, and also a diminution of the irritability in the course of the entire nerve-trunk, since the action of nerve-stretching goes much further in this direction than simple division of a nerve; and also from the circulatory changes there results an alteration in the nutrition—altered though it already is—of the nerve. Thus there is a combination of effects, which must almost necessarily produce a favourable influence on the disease, provided always that the *secondary changes in the nerve-centre* are not altogether beyond the possibilities of resolution. This operation, of course, is only admissible for sensory nerves.

2. Nerve-stretching alone will be indicated under analogous conditions for *mixed* nerves. If we are called to treat a neuralgic affection, we should, of course, remove all local irritations by local measures (such as removing or detaching scars in the neighbourhood of nerves), and at the same time by "stretching" seek to paralyze the result of the previous irritation. We might even, under certain circumstances, proceed to stretch the nerve-trunk without adopting the above-mentioned preliminary measures, when all medicinal and electro-therapeutical measures had previously failed. In the latter case we should seek to get at the nerve at the nearest possible point to its centre, and by vigorous stretching endeavour to influence the local condition also.

3. Neurotomy alone is indicated in neuralgic affections of *a very localized nature*, where a *subcutaneous* division of the affected nerve-twig would suffice, and where the laying bare of the nerve-trunk would scarcely be justifiable. In this group may be placed neuralgias of single sensory twigs in the case of extensive, and hence not easily extirpated scars, tumours, and the like.

B. *In Epilepsy.*—The cases of epilepsy to which this plan of treatment is adapted are those which we call *reflex epilepsy*, depending on some appreciable or fairly obvious injury of a peripheral nerve distribution. There is on record a large number of cases where the removal of scars, neurotomy, etc., have led to a perfect cure. Cases 1 and 6 (before given) are also examples of the favourable effect of stretching under analogous circumstances. The following would seem to be an exceedingly suitable case for the operation: A man had a small tumour removed from the cheek. The wound only closed slowly. Shortly afterwards, after any great exertion or excitement, he began to experience a feeling of heat about the scar, and occasionally a twitching and spasm in the muscles of the neck. These symptoms became aggravated after a time, and now he is the subject of well-marked epileptic attacks. On examining the local conditions more thoroughly, a scar, about the size of a florin, is found in front of and beneath the angle of the right jaw. It is not painful or tender, and nothing abnormal is found in the surrounding parts. But there is one point which is painful, from which the twitchings seem to start. Topographically it corresponds exactly to the point of exit of the nervus cutaneus colli superior et medius of the cervical plexus. The author believes that he has here found the source of the peripheral irritation, and has advised stretching

of the nerve-trunk where the twig arises. The case is to be recorded later on. In all cases, however, the indication must be exact and precise if we would be successful.

C. *Traumatic Tetanus.*—Contrary to the advice given in the two previous classes of cases, we must in this disease *proceed to operation at once*, and *not wait* until all therapeutic and anæsthetic measures have been tried. If needs be, order these measures *in addition* to the nerve-stretching, but not *in its stead*. The surgical treatment may be both local and central. The cases, however, where any active local treatment can be of avail, are those in which no important changes in the central nervous system have shown themselves. The period during which local treatment *might* be of service is exceedingly short. In some patients the central manifestations come on simultaneously with the disease; and here, of course, local treatment would not be of any avail whatever. As compared with all previous operative interference, nerve-stretching accomplishes much more, is a harmless operation if it even do not succeed, and does not require a solution of continuity in the nerve.

The group of cases above given has been selected in order to give some definite indications for undertaking this operation. But it is obvious that a much larger group might have been given. In order to sum up, then, we may state that the prominent symptoms which call for this treatment are *exalted irritability*, and *disturbed function due to a disturbed blood circulation* at the peripheral termination of a nerve.

V. *Technology of the Operation.*—The actual accomplishment of such an operation appears very simple, and yet from a study of all the published details it is clear that final success depends very much on attention to small matters, which sometimes are apt to be forgotten. The operation may be divided into three stages: 1. Laying bare the nerve within its sheath. 2. Drawing forwards and stretching the nerve. 3. Reposition and application of dressings. The first act of the operation is a most important one. In the case of traumatic tetanus before reported, some important changes were found, not only in the nerve itself, but also in the surroundings of its sheath; in all such cases *it is recommended directly to free* the nerve-sheath on all sides as far as one can reach; stretching then accomplishes the rest. The second act of the operation may be performed either manually or instrumentally. For the drawing forward of the nerve one naturally uses a blunt hook, or an elevator, or for a small nerve an ordinary aneurism needle. The actual stretching is best accomplished by passing the forefinger, appropriately curved, beneath the nerve, and using it in conjunction with the thumb. By this means we secure as much force as is necessary, provided we place the limb in a suitable position. Were a hook used for the stretching, there would be a danger of locally injuring the nerve itself, which is not possible when the finger is used. In the case of small nerves it would be impossible to pass the finger beneath them, and hence a thin elastic band may be substituted. In this way an *elastic* traction can be exercised without the risk of bruising or otherwise injuring the nerve itself. The last part of the operation consists of the dressing. If the stretched nerve does not recede when the limb is placed back in its normal position, or if the part operated on is one (the face) in which these movements would be impossible, the operator must gently tuck in the nerve into its bed. A small bit of drainage-tube is to be placed at the bottom of the wound, which may then be appropriately closed by a few sutures. Lister's dressing and spray ought to be used in these cases, as rapid union and a small scar must be tried for.

It does not seem to us necessary to follow the author any further. All practical surgeons will be acquainted with the points at which the nerves can best be got at. It is obvious that in this operation, as in tying arteries, there is a *lieu d'election*, and that success will be in proportion to the skill with which the operation is performed and the after-treatment attended to.—*Med. Times and Gaz.*, Sept. 15, 1877.

Muscular Atrophy in Affections of the Joints.

In a memoir just published (H. B. Baillière) M. Valtat, of Paris, discusses, in an exhaustive manner, the subject of muscular wasting in connection with articular disease. He points out that in all joint affections—even in an acute arthritis, which gets well in a few days—the muscles in the neighbourhood of the joint, and also those that are at some distance from it, become weak and rapidly atrophy. As a rule, the extensors are the first to fail—*e. g.*, the triceps cruris in disease of the knee, or the deltoid when the shoulder-joint is affected; and in long-standing cases the whole limb may be wasted, although the atrophy is most marked in those muscles which act directly on the joint. The wasting commences very soon after the first symptoms of joint affection are shown, so that by the eighth to the twelfth day after the onset of the arthritis there will be marked diminution in the size of the limb. This wasting cannot, he thinks, be due to simple inaction from forced disuse, because of its early appearance and the frequency with which it persists for a long time after the joint affection has subsided; and this view is further borne out by the results of experimental investigations which he has made in M. Vulpian's laboratory. By exciting artificial inflammation in the joints of animals (guinea-pigs and dogs), by means of the injection of irritants, etc., he has produced very marked effects on the muscles within a few days of operation, and has found all the evidences of atrophy in the affected muscles, which diminish markedly in volume and weight. The atrophy is not due to fatty degeneration, but simply to wasting of the muscular tissue leading to paralysis, which can be cured, and the nutrition of the muscle restored, by means of electricity. He insists upon more attention being paid to the condition of the muscles in these cases, and upon their ready amenability to treatment. His conclusions may be briefly summed up as follows: 1st. That the majority of joint diseases markedly influence the nutrition of the muscular system. 2d. That, in the majority of the various kinds of arthritis, from the very onset of the disease, there supervenes considerable atrophy and more or less marked paralysis of certain muscles, particularly those acting on the affected joint. 3d. This atrophy cannot be attributed to functional inactivity, nor to inflammation of the muscles, nerves, or spinal cord; but it is most likely produced in a reflex manner. 4th. It usually increases as long as the articular disease lasts, and although occasionally it may be transitory, in the immense majority of cases it persists after the cure of the arthritis, and then forms the chief hindrance to the restoration of movement in the limb. 5th. Its duration is generally very long, and it has only slight tendency to spontaneous cure. Sometimes, under the effects of simple exercise, the muscles may recover their power and volume, but this is not only rare, but is always tedious and often incomplete. 6th. These atrophic lesions are readily and rapidly cured by the use of feeble continuous currents, and better still by the combined use of galvanism and faradaism.—*Lancet*, Sept. 22, 1877.

Midwifery and Gynæcology.

Ante-Partum Hour-Glass Contraction of the Uterus.

Dr. Hosmer reported at a late meeting of the Obstetrical Society of Boston (*Boston Med. and Surg. Journal*, Oct. 18, 1877) the following case, which he had seen in consultation. The patient was a primipara, short, stout, and thirty years of age. She had passed her full time, had been in labour seventy hours when Dr. Hosmer was called, at ten or eleven o'clock P. M. At this time the pains were less frequent and strong than they had been; the general condition was fair. The forceps had been tried. The pelvis was narrow, the pubic arch

contracted, and the promontory of the sacrum very much advanced. The occiput lay towards the right acetabulum and thrown very far forwards over the pubic bones, the head forming a prominent mass externally. The os was well dilated and out of the way; the parts moist and of good temperature. Another attempt was made with the forceps. They were got on without much delay, but slipped off posteriorly, the forward position of the head—anterior to the axis of the superior strait—preventing an equatorial application. Next, version was attempted. The hand was carried up with difficulty; the left foot was seized and brought into the vagina. No force thus applied could change the position of the child. A loop of tape was then passed around the limb, and traction strongly made with it until the yielding of the tissues compelled an abandonment. Then the head was opened and emptied of its contents, and the forceps applied to the diminished mass, but neither this nor traction on the head by the ordinary instruments resulted in the least progress. It was next determined to seize the other foot, in process of which an unexpected difficulty presented itself. A powerful uterine constriction was discovered. The ether, under the moderate influence of which the patient had hitherto remained, was now pushed to its utmost. The hand was carried up gently, steadily, perseveringly, and the pelvis of the child was found firmly grasped by a powerful uterine constriction sharp and distinct, with well-defined edge, in the cavity beyond which the right foot was reached with difficulty. After a prolonged effort this foot was brought down to the brim of the pelvis, but could be got no further. A loop of strong tape was then carried up over the hand and made fast to the leg; after a considerable time version was at length accomplished, and a female child, weighing six or seven pounds, was delivered. The woman died seventy-two hours afterwards.

Dr. Hosmer stated in addition, in answer to questions, that he did not observe whether it was possible to detect the constriction externally. This condition was not discovered in the search for the first foot, which lay below it. Traction was made at right angles to the plane of the superior strait. Dr. Hosmer stated that he had never before met with an ante-partum hour-glass contraction.

Dr. Fifield said he had frequently been unable to deliver by traction in the direction of the axis of the superior strait, while he had succeeded very easily with a forward traction, making the occiput slide along the pubic surface, and he had practically adopted this method.

Dr. Hosmer remarked in reply to questions that the antero-posterior diameter was narrow and the head was resting on the top of the pubis. He thought that the only possible objection to turning in such cases was the risk of injury from the sharp edges of the cranial bones. He would say that in the case of version resorted to after an unsuccessful craniotomy, the risk of damage from the edges of the cranial bones is so small that it practically amounts to nothing by reason of the protection afforded by the scalp, and it certainly could be determined beforehand whether there were in the artificial foramen any projecting point or angle which would expose the soft tissues of the mother to laceration and injury.

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Anæsthetics during Labour.

M. Piachaud, of Geneva, read (*Gaz. Hebdom.*, Sept. 28) a report at the International Medical Congress, just held at Geneva, in which he strongly advocated the use of chloroform in natural labour. The precept is generally delivered, he observed, to administer it only during the period of expulsion; but in certain cases of extreme nervousness (*neurosite*) and agitation it is advantageous not to wait for complete dilatation before employing it. It is also indicated when labour is suspended or retarded by suffering induced by anterior diseases, or which may arise during its course; and also in cases in which irregular or partial contractions occasion internal and almost continuous suffering without furthering the progress of the labour. Chloroform, he adds, should never be given without the consent of the woman and her family. Prof. Courty, of Montpellier, observed that the French school had shown too great

timidity in the obstetrical employment of chloroform, and thus left lying-in women exposed to numerous accidents. Paul Dubois rejected chloroform in general, but admitted its employment when the pains were so abnormal as to call for other sedative means or surgical intervention. Since that time the question has not advanced a step in France. Prof. Courty feels himself authorized by the results of his own practice to strongly advise the use of chloroform in labour. It is not indicated in cases that are quite normal, but only when the pains are too severe or irregular, or when the patients demand its employment. A semi-narcosis suffices to render the pains quite supportable. It diminishes perineal resistance, so that all the force of the uterus is usefully employed, and the duration of labour is diminished by nearly one-half. Uterine inertia is of much rarer occurrence—so that chloroform has the advantage of chloral and ergot united.—*Med. Times and Gaz.*, Oct. 6, 1877.

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Morphia in Childbirth.

From a study of the effects upon the unborn infant of morphia administered to the mother, Dr. W. T. Lusk, Professor of Obstetrics in Bellevue Hospital Medical College, reaches the conclusion (*Am. Journal of Obstet.*, July, 1877), that so far as deductions can be drawn from a limited number of observations, there is no reason to apprehend any *direct* effect to the child from morphia hypodermically administered to the mother during labour. The propriety of its use, therefore, is to be determined by pure obstetric considerations. When given to meet some urgent need in the mother, it probably conduces indirectly to the welfare of the child.

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A Case of Placenta Prævia treated by bringing on Premature Delivery.

At a meeting of the New York Obstetrical Society (*Am. Journal of Obstetrics*, Oct. 1877), Dr. T. Gaillard Thomas related the following history of a case of placenta prævia treated by bringing on premature delivery.

Mrs. R., a primapara, æt. 24, ceased to menstruate about the end of May. In the middle of October she had a slight hemorrhage, and this was repeated twice in November and twice in January, and again on the 16th of February. All these attacks came on early in the morning, and in each she lost about two ounces of blood. On Friday, Feb. 23, on rising to empty the bladder, she lost a large amount of blood, at least a quart, all in a few minutes. She lost a little on Saturday, and on Sunday lost a pint at each of two flowings. She continued to lose a little blood after this until Monday afternoon, when Dr. Thomas saw her, in consultation with Dr. Gilchrist. She was then very much exhausted from the prolonged and copious losses of blood; and in view of the facts that she had still two weeks to go before reaching the full period of gestation, that her child appeared to be still alive, and that it appeared highly improbable that either her strength, or that of her infant, would withstand other losses, Dr. Thomas urged an immediate resort to premature delivery. At this time the edge of the placenta could be distinctly felt by the finger inserted into the cervical canal, and it was looked upon as almost certain that other losses would occur. Dr. Gilchrist, gladly accepting the proposal of premature delivery, inserted the smallest of Barnes's dilators at eight o'clock that night. At half-past nine the second size was inserted; and at ten o'clock he sent for Dr. Thomas, declaring that the patient's condition was a very unsatisfactory one. When he met him at this time he found that, without creating hemorrhage, he had accomplished a good, though not complete, dilatation of the os. But the patient had become very nervous, and was tossing her arms from side to side; the respiration was sighing, pulse small and rapid, and some loss of blood was occurring. The outlook for a lengthy labour was very bad; so, with Dr. Gilchrist's concurrence, he at once introduced the largest dilator, and having fully dilated the os externum, gently turned by the bimanual method, and delivered a fine boy. The child did perfectly well, and the mother slowly recovered. Her health, in the course of a month, was remarkably good when the great loss of blood which she sustained was taken into consideration.

Dr. Thomas said that he brought this case before the Society as additional evidence in favour of this method of treating these cases. He had now brought on premature labour in eleven cases of placenta prævia, and had lost only two women, and neither of these from the placenta prævia direct. One died of post-partum hemorrhage, coming on several hours after delivery, and the other died of puerperal fever.

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On the Treatment of Cancer of the Uterus during Pregnancy.

In the *Zeitschrift für Geburtshülfe und Gynækologie*, Bd. 1, Heft 2, 1877, Dr. Fritz Benicke gives five cases of cancer of the uterus, in which operative interference was practised during pregnancy. The first case was that of a woman in the seventh month of gestation, with carcinoma of the cervix, affecting chiefly the posterior lip, and traceable within the cervical canal nearly to the os internum. It bled easily on examination. The neoplasm was scooped out, the bleeding being slight during and after the operation. Six days afterward the patient gave birth to a living child, labour being easy, and not attended with undue loss of blood. The child died in the course of a few days. The disease returned in about three months, affecting the vagina, the vaginal portion of the cervix having been destroyed. In the second case, also, the disease was seated chiefly in the posterior lip, with an ulcer on the anterior lip. In the fifth month of pregnancy the neoplasm was removed as thoroughly as possible with scissors and a sharp scoop, and the ulcer of the anterior lip excised. The bleeding was easily checked. The patient remained quiet in bed for eight days, and her pregnancy advanced to term without further hemorrhage or discharge. A living child was born six hours after the pains began. The placenta was said to have been adherent, and was removed by the physician. Eight weeks after delivery the woman complained of a watery, offensive discharge, with slight irregular hemorrhages and pain, which had existed for about three weeks. The vaginal portion of the cervix was found changed into a tumour as large as a small apple, with degeneration of the anterior lip also.

In the third case the vagina was filled with a firm, nodular tumour, with a fissured surface, proceeding from the posterior lip of the cervix. The anterior lip and the vaginal walls seemed intact. In the sixth month of gestation the tumour was removed by means of the écraseur, making an opening as large as a bean into Douglas's space. The hemorrhage was high. On the second day severe pain began in the back and abdomen, with high fever. These symptoms continued for nine days, when a dead child was expelled. The labour was normal, and the bleeding slight. On the fifth day after delivery there were two well-marked eclamptic seizures. The urine was highly albuminous, but no casts were discovered. The attacks were not repeated, and five days later the patient was discharged.

In the fourth case the disease was most marked in the posterior lip, forming a tumour about as large as a pigeon's egg. Near the close of pregnancy the mass was removed with scissors and a sharp scoop. Five days afterward a living child was born, after a rapid labour, and scarcely a drop of blood was lost. In about four months the operation was repeated, on account of a return of the disease.

In the fifth case the vaginal portion of the cervix was highly swollen and puffy, with eversion of the lips, so that with the speculum the cervical mucous membrane could be seen of a dusky-red colour and granular. A small piece of it was excised, and shown by the microscope to be undoubtedly carcinomatous. In the fifth month of pregnancy the cervix was amputated with the knife, and the cut surface freely treated with the hot iron. The bleeding was moderate. Labour came on the next day. The placenta, being rather firmly adherent, could not be expressed, and had to be extracted with the hand. A highly exuberant decidua was found on the secundines, and microscopical examination revealed diffuse decidual endometritis. Five months afterward there was slight leucorrhœa, the os externum admitted the finger, the vaginal portion of the cervix was wholly wanting, and the parts looked well on examination with the speculum.

The author urges more frequent resort to removal of the disease during pregnancy, provided it have not yet exceeded the limits of the vaginal portion of the cervix, as it materially ameliorates the result of parturition to both mother and child.—*Hospital Gazette*, Oct. 1, 1877.

Congenital Hernia of both Ovaries.

Mr. W. Makeig Jones, House-Surgeon at the Rotherham Hospital, reports (*British Med. Journal*, Sept. 22, 1877) the following case of this rare condition:—

A. E. C., aged 23, came to the out-patient room on August 1, complaining of dragging pains about her abdomen and a swelling in both labia. She was married and had one child. Ever since she could remember. when she stood up, a small lump descended into each labium, going back again on lying down. She had always suffered from pains in the abdomen; and, at her menstrual periods, the lumps themselves were painful. On examination, a small roundish tumour was found in each labium, feeling like a testicle, quite easily returnable into the abdomen through the inguinal canal. It was quite dull on percussion, and there was no impulse on coughing. Double ovarian hernia was at once diagnosed; and the diagnosis was confirmed on her coming the following week, during her catamenial period, with both tumours swollen and tender. An ordinary double inguinal truss was given her, which effectually prevented the descent of the tumours; and she reported herself last week as being quite well and entirely free from her abdominal pains.

The great interest of this case lies in its analogy to the descent of the testicle in the male, and in the fact that, notwithstanding the malposition of both ovaries, she had actually been impregnated and given birth to a living child.

Medical Jurisprudence and Toxicology.

On Acute Poisoning by Salicylate of Sodium.

In the *Deutsche Medicinische Wochenschrift* (January 13th) Professor Ferdinand Petersen, of Kiel, details the following case of poisoning by salicylate of sodium. He remarks that, so far as he knows, the case is unique; the only cases hitherto recorded being of only subacute poisoning, or rather of disagreeable symptoms after the administration of over-doses of this substance. In a subsequent number he refers to the literature of the subject. The patient was a young girl, aged 15, named Rebecca Horn, whom he describes as strongly built, of "blooming" appearance, although suffering from chronic fungating disease of the ankle-joint, for which he performed resection on the 11th of January. Up to the 14th all went on well, but on the 15th she was feverish, and the wound smelt offensively. On the 18th the wound was disinfected with zinc chloride, and the plaster of Paris bandage renewed. Next day she took several 1 gramme (15.5 grains nearly) doses of salicylate of sodium, without much effect. From the 22d, the patient took 4 grammes (about 1 drachm) of the medicine, when her temperature was 101.1° F. (38.6° C.); and when it amounted to 103° F. (39.4° C. or more) 6 grammes (1½ drachms nearly). This also had but little effect. On the 25th, in consequence of a misunderstanding, the patient had the following doses, her temperature being as follows:—

Hours.	vi.	viii.	x.	xii.	ii.	iv.	vi.	viii.	x.
Temperature in degrees Fahrenheit.	101.1	101.6	100.4	101.9	103.3	103	103	102.2	101.5
Quantity of sodium salicylate.	1 drm.	.....	.....	1 drm.	1½ drm.	1½ drm.	1½ drm.	1 drm.	1 drm.

The last two doses were, fortunately for her, vomited almost immediately. Thus the patient had taken altogether, from 6 A. M. till the evening, 26 grammes (401 grains nearly), or from noon till 6 o'clock in the evening, 22 grammes = 340 grains. Professor Petersen saw her first in the forenoon of the 26th, and was struck by her anxious expression. She was restless, the face flushed, pupils very dilated, and scarcely responsive to light, with considerable divergent strabismus; respirations nearly 60 per minute, but not shallow; the pulse little quickened, if at all; the sensorium free, but speech difficult. Temperature at 6 A. M., 98.9° F.; at 8 A. M., 98.6° F.; at 10 A. M. 99.3° F. At noon she began to be delirious; temperature 101.1° F. She was ordered bromide of potassium. At 2 P. M., temperature 102.2° F. (bromide of potassium ½ drachm); at 4 P. M., 101.8° F. (bromide ½ drachm again); at 6 o'clock, 101.5° F.; at 7 o'clock, after the bromide, she was more tranquil. A peculiar regular alternation of symptoms was noted; at one time she had hallucinations, then lay in an uneasy half-wakeful condition; at one time she was quite conscious for a few moments, recognizing those around her, though she seemed unable to see far, and answering questions. She spoke hoarsely, and by no means distinctly; she stammered, stuttered, and seemed unable to pronounce many words, even when they were said to her first. There was a sort of glazy look about the eyes. Respiration 40, deep and noisy; pulse very irregular, sometimes very quick, sometimes almost as slow as normal, and then again small and weak. About fifteen minims of camphorated oil were injected. After noon there was swelling of the inguinal glands of the left leg (on the side of the resection), and considerable tenderness on pressure on the inner side of the thigh, but no redness. An ice bag, and iced-water applications to the head and body, were ordered, the former on account of headache. On the 27th she was somewhat better. At 10 A. M. her temperature was 102.2° F., respirations 36, pulse small and irregular, about 120. The urine was as on the preceding day, of dark smutty brown colour, giving reactions of salicylic acid, and containing about 2 per cent. of albumen; quantity and specific gravity normal. She took egg and brandy, and continued the bromide. At 7 P. M. she still complained of much thirst, and a feeling of dryness in the mouth and throat. On the forehead and rest of the face, on the neck and the legs (below the knees), there was a good deal of redness in circumscribed patches (erythema). The redness vanished on pressure, but returned again. Mydriasis and strabismus divergens were less evident, otherwise there was little change. 8 P. M., temperature = 99° F.; at 10 P. M. = 100 6° F. On the 28th the red patches had vanished from the original spots, but others had arisen. There was a bedsore about the size of a dollar, and rather deep, in the middle of the lumbar region. The patient had had no quiet sleep yet. Urine was still albuminous, and of dark brown colour; pulse, respiration, and temperature nearly as before. January 29th, after some hours' quiet sleep she was somewhat better. The delirious intervals were longer apart, and she was less apathetic. Showed less difficulty and stammering in speech. The bromide of potassium was continued. On the 4th of February, the urine for the first time appeared normal, her mind was clear, her appetite good, and she was free from the distressing symptoms.

The further history of the case is only of surgical interest, except so far as relates to her general health and appearance, which are again described as "blooming" in October, although until the middle of April the temperatures remained subfebrile, and even in October the wounds were not healed. The tolerance of patients for salicylic acid and its sodium salt is very different in different individuals. Thus Goltdammer (*Berlin Klin. Wochenschr.*, No. 4, 1876) had symptoms of poisoning after one of his patients took only 5 grammes (about 77 grains) whilst Stricker (*ibid.*, No. 1876) had a patient who took 22 grammes (340 grains) in 12 hours, without any severe symptoms. Nathan (*Inaug. Dissert.*, Kiel, 1875) gave a patient 25 grammes (401 grains) in 12 hours. In the case recorded above, the patient had very severe results after 401 grains in 12 hours, or after 340 grains in 6 hours. Some of her symptoms were novel. Feser and Friedberger (*Archiv für Wissenschaftl.*, and *pract. Thierheilkunde*, Band I, heft 2) found that it mattered little whether salicylic

acid or its sodium salt were given. Binz (*Berlin Klin. Wochenschrift*, No. 27, 1876) thinks the acid of the salts is set free by the carbon dioxide in the body. In the case detailed the psychical symptoms were very marked. Her delusions were not of a cheerful nature as in Stricker's case (*Berlin Klin. Wochenschr.*, No. 8, 1876). These delusions and illusions made her weep, and she firmly believed in them. Her peculiar mental condition lasted about eight days, the lucid intervals growing longer and longer. The temperature did not affect her mental condition. She remembers nothing of this condition now, except what she has been told of it. Riess (*Berlin Klin. Wochens.*, No. 50, 1876) has several times seen great excitement from the delusions. Stricker's cases, before mentioned, had cheerful delirium and delusions. Riegel (*ibid.*, No. 14, 1876) speaks of head symptoms, sudden transient delirium, vertigo, and headache, occurring in two cases. Schumacher (*Deutsche Med. Wochens.*, No. 18, 1876) mentions lively delirium after 5 (15-grain) doses of salicylic acid, with tormenting and painful hallucinations of sight. On another occasion there was much sleeplessness. Justa (*loc. cit. supra*, No. 22, 1876) saw sudden and severe disorders after about 2½ drachms of the acid, and about 4 drachms of the sodium salt, but the case was one of acute rheumatism with pericarditis. Headaches are a common symptom; impairment of vision, noticed in our case, is not mentioned by any one else except Riess. Feser and Friedberger saw dilated pupils in two dogs. In this case there were strabismus divergens and mydriasis to a great extent. Noises in the ears and partial deafness are very common symptoms. Dysphasia seems a new symptom. The hoarseness could not be elucidated by laryngoscopy, this being impossible. It lasted 45 days. Feser and Friedberger noted accelerated respiration in carnivora (herbivora were little affected, even in large doses). The acceleration of the pulse and heart was also noted by them in dogs, as also the irregularity of the circulation. Bartels and Lürmann noted the same in the human subject. Buss and Nathan say that the pulse frequently falls with the temperature, whilst Riess did not note any alteration of pulse, so that with low, normal temperatures, the pulse remained abnormally high.

In the case recorded here, the temperature was not affected, or very slightly. Though it fell next day, there were no collapse-temperatures, such as Riess and Riegel record in delicate people; Goltdammer records collapse after only 77 grains. Lürmann records an abnormally high temperature. The vaso-motor disturbances (erythema of wandering character, rapid formation of bed-sore, etc.) deserve note. The sweating on the first few days was enormous ("colossal," see Moeli, in *Berl. Klin. Wochenschr.*, No. 38, 1875). The gastric disturbances were trifling, there was little pain or diarrhœa, but the feces were very offensive. The urine was of the usual type as regards colour and reaction, which lasted ten days. There was no œdema of the extremities, as in Lürmann's case.

Professor Petersen quotes Bardenhewer, Moeli, Von Brunn, Riegel, and Fleischer; and refers to Nos. 26 of the *Berliner Klin. Wochenschrift* for 1876, and No. 39 of the same Journal for 1875; also to No. 13 of the *Deutsche Med. Wochenschrift* for 1876. He concludes that salicylate of sodium is an antipyretic that must be used cautiously.—*London Med. Record*, Aug. 15, 1877.

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Coffee as an Antidote to Strychnia.

Dr. Attilio Lelli having met with a case in which a large dose of strychnia was administered in coffee without fatal consequences, was led to institute some experiments to determine whether it possessed an antitoxic power against this drug. The animals employed were rabbits, and by comparative trials he found that a dose of five centigrammes proved fatal in a short space of time; when the same or a larger dose was given in a very strong infusion of coffee, he found that the coffee either acted as a complete antidote in preventing the poisonous effects of the strychnia, or that it materially diminished the violence of its action. The details of the experiments are given in the *Rivista Sperimentale di Freniatria*, edited by Prof. Carlo Livi, of which the first Fasciculus of the third volume has just been issued.—*Lancet*, Sept. 1, 1877.

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THE MONTHLY ABSTRACT
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MEDICAL SCIENCE.

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Anatomy and Physiology.

Recent Researches on the Physiology of the Brain.

The results of a long and carefully conducted series of experiments on the motor centres of the brain appear in the Italian journal *Lo Sperimentale*, from the pens of MM. LUSSANA and LEMOIGNE. In regard to the cortex of the brain, they found that various movements could be produced by electrical, but not by mechanical, stimuli, though they are of opinion that if the theory of the existence of true motor centres in the cortex were sound, the latter cause should be as efficient as the former. Moreover, no evidence can be obtained showing that very young animals possess any cortical centres, which is in opposition to the view maintained by Schiff, who regards the centres of the cortex as sensory or reflex centres; and their own prior experiments have shown that reflex actions are particularly easily excited in young animals, much more so, at any rate, than in adults. Lastly, they notice that the paretic condition occurring after the extirpation of a cortical centre is only transient, and certainly does not permanently abolish the movements which may be aroused by excitation of the region. The authors think there can be no doubt that the centres of the cortex can excite to action, but that the excitation stimulates the true motor centres just as sensations liberate reflex movements. The paresis occurring after destruction or extirpation of the centres they attribute to a transient functional inertia, and represent it as being analogous to the mydriasis that is observed after section of the optic nerve. They consider also that a solidarity of functions is gradually developed between the motor centres in the cortex cerebri and those in the pes of the cerebral peduncle resulting from the psychical characters—in other words, the habits—of the animal.

In regard to the optic thalami and the middle white fasciculi of the cerebral peduncle, they find that on destroying them, paralysis of the movements of adduction of the forelimb on the same side and of abduction of the forelimb of the opposite side takes place, as well as paralysis of the toes. The same disturbances result if, instead of the optic thalami, those fasciculi of the cerebral peduncle are divided which lie near the median line and just above the substantia nigra. If, instead of destroying these parts, they are strongly excited, the opposite conditions are established, the adduction of the anterior limb of the corresponding side is increased, and there is abduction of the opposite one, so that the forelimbs are turned away from the injured side, and the animal rolls towards this side. The same thing happens if only the anterior border of one thalamus is injured. If the excitation of the optic thalami be limited to the most superficial strata, no movements occur. This stratum has something to do, though its function cannot be accurately defined, with the sense of vision, for if it be destroyed, the opposite eye is blinded. The authors, however, are strongly opposed to the views of Luys which have been advanced in his work on the brain recently published in the *Bibliothèque Scientifique Internationale*, and which are to the effect that the thalamus opticus is the seat of the sensorium commune, and is especially connected with sensibility. The corpora quadrigemina are, with the superficial stratum of the optic thalamus, the centres for visual perceptions, whilst the processus a cerebello ad corpora quadrigemina constitute the centres for the lateral movements of the vertebral

column. Their section occasions paralysis of the dorsal muscles of the opposite side, curvature of the column with the concavity looking towards the injured side, and a compulsory lateral recumbent position on the corresponding side. The lower plane of fibres of the cerebral peduncle (pes), and the internal capsule with its prolongation between the lenticular nucleus and the corpus striatum, innervate the muscles of extension of the posterior limb of the opposite side, and the same influence is exerted by the nucleus caudatus. The destruction of these parts therefore inhibits the forward movements, whilst their stimulation gives rise to an irresistible tendency to move forwards. The fasciculi teretes, which are seen on either side of the floor of the fourth ventricle, when irritated, cause extension of the neck and of the anterior extremities, flexion of the spine and of the posterior extremities, whilst their transverse division causes irresistible tendency to move forward.

The authors consider that neither the cerebellum nor the processus cerebelli ad medullam oblongatam contain motor centres, and any movements that are either excited or abolished when they are irritated or destroyed are due to injury of other and adjoining textures. They apply the term pedunculi transversi to the fibres which form the processus cerebelli ad pontem and the pons itself, and also enter into the formation of the medulla oblongata, and show that unilateral section of them paralyses the muscles which roll the body on its long axis to the opposite side. The pons contains centres for the movements of the body, and of the limbs, but no centres of sensation or of the will. Lastly, the medulla oblongata contains centres the functions of which are exceedingly diverse, some being sensory, some motor—such, for example, as the transverse fasciculi for the rolling movements, the fasciculi teretes for the backward movements, the lateral columns and the olivary bodies for the movements of the face, tongue, alæ nasi, and for respiration.—*Lancet*, October 20, 1877.

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On the Structure of the Retina of Man.

Professor Merkel has a very interesting communication on this subject in the June number of Zehender's *Monatsblätter*. He recognizes nine layers: the optic nerve layer, the ganglion cell layer, the inner granular layer, the inner nuclear layer, and the outer granular layer, which he classes as cerebral; and the outer nuclear layer, membrana limitans externa, layer of rods and cones, and the pigment-layer, which he designates as epithelial.

He states that the nerve-cells of the ganglion-layer are disposed in a single series, except in the yellow spot and its immediate neighbourhood, and that they are crowded together at the fundus and widely separated at the periphery. He confesses to having seen the actual connection of the branch of a nerve-cell and the inner nucleus of a cone in but a single instance; a connection totally denied by Hannover, but one which has been observed by H. Müller, Ritter, Gerlach, Hulke, Manz, and Gunn.

Professor Merkel describes the substance of which the granular layers consist as a material which can neither be considered as belonging to the nervous nor to the supporting structures of the retina, but as intermediate or between the two. It consists of a homogeneous mass containing minute vacuoles in which are solid nucleoli.

The author considers that the membrana limitans interna, as distinct from the membrana hyaloidea, consists of the connective bundles which form the framework of the retina; these are flattened out and united together so as to resemble a single layer of pavement-epithelium. The flattened ends of these fibres form a layer of conical elements on the inner surface of the retina, which give off radiating anastomosing fibres in the nerve-fibre layer. Long fine fibres and thin plates are given off from the apices of these cones, which support the ganglion cells; the apices themselves are prolonged as delicate bundles through the inner granular layer—they give off radiating fibres in the inner granule or nuclear layer, and contain a nucleus. They are also prolonged into the outer nuclear layer, where they form a sponge-like network, give membranous expan-

sions which cover the nuclei of the rods and cones, and become continuous with the perforated limitans externa, and the basket-like processes of the rods and cones.—*London Med. Record*, Oct. 15, 1877.

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On the Influence of Sleep on the Activity of the Kidneys.

It has been ascertained by Prof. QUINCKE (*Archiv für experimentelle Pathol. und Pharmakol.*), that whereas the urine secreted during sleep is scanty and of high specific gravity, that secreted during the first three hours after waking is more abundant and of lower density than during any similar period of the twenty-four hours. A number of observations were made to establish this point, the subject remaining in bed, and taking neither food nor drink for the three hours in question. The fact admits of being interpreted in various ways. We may suppose the absorption of fluid from the intestinal canal to be arrested during sleep and resumed on waking. This hypothesis is a most unlikely one, for the periodic variation takes place as usual when no liquid has been taken within four hours of retiring for the night. It is probable that the physiological activity of the kidneys may be checked during sleep, owing partly to diminished energy of the secretory nerves, partly to contraction of the renal bloodvessels, partly to a lowering of tension throughout the arterial system. This is the most probable explanation, but it is still in need of proof.—*London Med. Record*, Oct. 15, 1877.

Materia Medica and Therapeutics.

The Active Principle of Ergot (Sclerotic Acid).

The pharmaceutical journals of last year contained a condensed summary of the important investigations of Prof. DRAGENDORFF, of Dorpat, and M. PODWISSOTZKY, on the constituents of ergot, in which they announced the discovery of a proximate principle of an acid character and exerting in a high degree the specific effects of the drug. Since then, the authors have published their results in detail (*Archiv für experimentelle Pathol. und Pharmacolog.*, 1877, No. 5). They give full details of the methods of preparation.

When properly purified, sclerotic acid is hygroscopic but not deliquescent, which circumstance distinguishes it advantageously from the commercial purified extracts of ergot. It is found in these in greater or lesser quantity, according as a weaker or a stronger alcohol was employed in exhausting the ergot. A few commercial extracts were found to be very deficient. In Bonjean's and Wernich's preparations and in Wiggers' osmazom it exists in considerable quantity, while scleromucin is almost entirely absent, as is the case in all alcoholic extracts of ergot. In Zweifel's preparation, the acid occurs in a tolerably pure state, in a less pure condition in Buchheim's. In alcoholic tinctures of ergot, and in Wiggers' ergotin, it is only present in traces, or is entirely absent.

Good ergot contains about 4 to 4.5 per cent. of the acid, although samples are met with which contain scarcely 1.5 to 2 per cent. "*New Remedies*," in referring to the subject, adds: Sclerotic acid (acidum scleroticum or sclerotinicum) is quoted in our prices-current at £5 per ounce. It is administered hypodermically in doses of 1-16th to 1-12th of a grain.—*London Med. Record*, Oct. 15, 1877.

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Use of Narceine and Codeine.

M. Claude Bernard's researches have already demonstrated that narceine is the most soporific substance in opium. Nevertheless, this substance is very

little used in therapeutics; and with the object of bringing its properties clearly to light M. Barnay has undertaken comparative researches on this alkaloid, as well as on codeine and morphine. According to M. Barnay, narceine ought to take the first place among the alkaloids of opium. His experiments show that it acts specially as a hypnotic, procuring sleep resembling normal sleep, followed by an absolutely normal awakening; it does not, like morphia, produce nausea, vertigo, and stupefaction, neither does it bring on irritation of the skin or convulsions like codeine. According to M. Debout, narceine, in addition to its hypnotic qualities, exercises a salutary influence in chronic bronchitis; it lessens the cough and modifies the expectoration. M. Béhier has always found it to ameliorate the general condition of phthisical patients both by lessening the cough and expectoration and lessening the diarrhœa. M. Juborde has obtained similar results in phthisis, and has also favourably modified the progress of whooping-cough by its use. The only inconvenience with which it can be charged is that it has in certain cases occasioned difficulty in voiding the urine. It may be administered in the same way as morphia, either by hypodermic injection or by the stomach, though it may be noted that Trousseau and Pidoux, in their *Traité de Thérapeutique*, do not recognize any advantage in the hypodermic method, on account of the slight solubility of the substance. At present, narceine is by no means generally found in the chemists' shops, but when medical men make up their minds to give to this substance the place it deserves in therapeutics, this difficulty will naturally remove itself. The tendency of codeine to produce convulsions is, according to M. Barnay, so great that it should be excluded from therapeutics. It is an interesting fact that up to a certain and large dose it appears innocuous, but if this dose be exceeded by so small a quantity as one to two milligrammes, convulsions may suddenly appear and bring on death.—*London Med. Record*, Oct. 15, 1877.

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Quinia Eruptions.

Dr. Ringer, in his "Handbook of Therapeutics," states that workers in bark sometimes suffer from a scaly papular eruption, sometimes from a vesicular weeping eruption, and occasionally with great swelling of the genitals or of the face and eyelids, with redness of the eyes. Itching of the whole body and urticaria are also said to have been produced by quinine. A recent number of the *Berliner Klinishe Wochenschrift* contains two communications on this subject, one from Dr. Buch of Hamburg, the other from Professor Pflüger of Berne. Dr. Buch's case was that of a man-servant, æt. 25, suffering from intermittent fever. For four or five days the patient took a grain of quinine every two or three hours, and on the fourth day an exanthematous eruption, in small patches, the size of a pea, reddish in colour, and somewhat raised, appeared on the legs. The eruption disappeared on pressure; there was neither pain, nor itching. The spots gradually became pale and disappeared, but a few days afterwards, on the medicine being resumed, the back was found to be covered with similar patches, some very large, and a few smaller papules. There was also considerable pain and tenderness in both knees, but no swelling. The eruption disappeared with the discontinuance of the medicine. Posner (*Handb. der klin. Arzneimittellehre*) mentions that rheumatoid pains sometimes follow the use of quinine. In Professor Pflüger's case the patient was a musician, very anæmic, and much reduced by venereal disease and mercurial treatment. By way of a tonic he was ordered decoction of bark. He had taken twenty-one doses when he was seized with shivering followed by fever, a feeling of intense itching and burning, especially in the hands and arms, which parts as well as the face and feet were much swollen and reddened. There was much excitement, distress, and thirst. The patient attributed his symptoms to the medicine, and asserted that he felt them coming on after the second dose. The febrile symptoms lasted for three days, and in fourteen days the patient was much as usual. There was some desquamation of the epidermis. Dr. Pflüger concluded that the symptoms were due either to some impurity in the medi-

cine, or to some idiosyncrasy on the part of the patient. He therefore tested the matter further by administering small doses of quinine. All the symptoms at once returned, and with increased intensity; the face, arms, and hands were enormously swollen, so as to suggest an attack of violent erysipelas. These symptoms lasted longer than before, and the desquamation on the hands was so marked, that the separated portions resembled fragments of a glove.—*Med. Examiner*, Oct. 25, 1877.

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Influence of Bromide and Iodide of Potassium on Gastric Digestion.

Dr. PUTZEYS has laid before the Belgian Academy of Medicine, a series of experiments in artificial digestion, in which he substituted hydriodic and hydrobromic acids for hydrochloric acid. He arrives at the following conclusions (*Bull. de l'Acad. de Belgique*, 1877, tome xl., p. 106). 1. Whatever may be the proportion of hydriodic acid existing in the digestive fluid, it cannot replace hydrochloric acid, its action being at once weaker and slower. 2. Bromide and iodide of potassium are not taken with equal tolerance if they are ingested at the moment when the stomach is called into action. He deduces from this, as a practical consequence, that it is for all reasons preferable to administer these two salts, but especially the iodide, half an hour or an hour before meals, when the stomach is empty, and its mucous membrane is covered with a coat of mucus, of which the reaction is neutral and sometimes even alkaline. Dr. Depaire, who has reported on these experiments, believes that they are not so decisive as Dr. Putzeys thinks, because the experimenter used fibrine dried at 110 deg. Cent. (230 Fahr.).—*London Med. Record*, Oct. 15, 1877.

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Fœtal Therapeutics.

Dr. ALFRED H. MCCLINTOCK, Ex-Master of the Dublin Lying-in Hospital, under this short and comprehensive title, offered at the late meeting of the British Medical Association (*Brit. Med. Journ.*, Oct. 13, 1877), some remarks on the possibility of medicines given to the mother acting upon the fœtus *in utero*. He said, I have nothing original to offer but a few clinical illustrations, which I would not have deemed worthy of your notice, but that I am desirous of bringing this interesting and important question under discussion, and of obtaining for it that consideration which it has had elsewhere, and which it well deserves at the hands of practical accoucheurs.

The time allowed for communications here is but limited; I must content myself, therefore, with very brief allusions to what has been already done in this field of research, and in other respects condense my observations as much as possible.

Our knowledge of the minute relations subsisting between the parent and the fœtus, and of the nature of the utero-placental circulation, is so imperfect that we can derive from it little or no assistance in this inquiry. We know certainly that the fœtus must derive its nutriment from the blood of the mother by some sort of osmosis; but physiology throws no further light on the matter, whilst the difficulties attending the experimental investigation of the subject are so many, so great, and so liable to fallacy, that I am satisfied we must look mainly to clinical experiences for information concerning it.

There are some sources of confusion and fallacy in this investigation which it may be well to point out, as they have not been sufficiently attended to by writers. For example, the influence on the sucking child of medicine given to its nurse has no bearing whatever upon the question of *fœtal* therapeutics, and cannot, therefore, be of any assistance in furthering our present inquiry. The conditions of the child in the two cases are so essentially different, that no comparison or analogy can be made between them in regard to the special point before us.

Again, the influence which diseases affecting the mother before impregnation may have on the product of that impregnation, should not, in my judgment, be admitted as evidence, even of a collateral kind, towards the solution of the questions under consideration.

Lastly, there are several dietetic and medicinal agents, as well as hygienic conditions, which we must suppose to be capable of affecting in some degree the well-being of the fœtus, but only *indirectly* so, and by their improving the health of the mother, and rendering her blood purer and richer. Although I lay this down, still we must admit that the distinction is a fine one, and that it may be very difficult, if not impossible, to discriminate between the effects of such agencies as those just named, and of medicines supposed to act by being carried into the circulation of the fœtus, and thus producing their specific effects on it.

It is quite unnecessary to adduce any evidence on the *negative* side of the question before us. The daily experience of each one of us will supply instances of the complete exemption of the fœtus from any participation in the effects of agencies or influences—whether medicinal, pathological, mental, or physical—of which the mother may be the subject. Hence some men have gone so far as to suppose it is utterly impossible that any drug given to the mother can directly extend its influence to the child *in utero*.

Whilst fully admitting the extent and the weight of the evidence which can be brought forward in support of this negative view, there are, on the other hand, however, facts of a positive kind which no amount of negative evidence can overturn, and which do establish the possibility of the thing. Its frequency or probability is quite another and distinct question, and one which can only be determined by a comparison of the number and weight of facts on each side.

This subject was ably discussed at the New York Obstetrical Society last January. The major part of the speakers, including Professor Fordyce Barker, expressed their disbelief in the transmission of drugs from the system of the mother to that of the fœtus, except, perhaps, in very minute quantity, and after their prolonged administration. The primary question considered in the above discussion, I may remark, had reference to the influence of opiates on the fœtus, and the conclusion at which Professor Barker arrived on this point is best given in his own words, viz.: "That there is no evidence which can be accepted in science that narcotic drugs administered to the mother ever produced their specific effects on the fœtus *in utero*." Dr. Gaillard Thomas stood nearly alone in speaking on the affirmative side of the question, and he maintained that thirteen cases had been submitted to the meeting, from his own practice and that of others, where narcotics administered in large doses to pregnant women had been followed by injurious and characteristic effects on the fœtus; and from them he concludes that, "if there be any value to be accorded to clinical evidences, these cases go to prove that large doses of narcotics (morphia and atropine) hypodermically administered to the pregnant woman may affect her child injuriously." Perhaps the most important point elicited by this lengthened discussion (which occupied the time of three meetings of the Society) was the greater risk of injury to the fœtus from the subcutaneous employment of the medicine than from its administration by the mouth or rectum.

Numerous experiments have been recorded by German physicians demonstrating the possibility of certain substances, especially iodine, chloroform, and salicylic acid, when administered to the mother, finding their way into the blood or secretions of the fœtus *in utero*. Professor Gusserow, of Strasburg, seems to have examined with great care the subject of the interchanges between the fœtus and the mother. His experiments, about eight in number, on the lower animals did not yield any positive results, which may probably be accounted for by the comparatively short time the parent was subjected to the action of the medicine. In fourteen instances, he gave patients pretty large doses of iodide of potassium for some days or weeks before delivery; and then he tested for iodine in the liquor amnii and the fœtal urine, when these could be obtained. Specimens of the urine were got in only eleven of these fœtuses, and five of the specimens contained iodine, while in six of them it was absent. The length of time the mother had been taking the medicine seemed to influence the result of the experiment. Benicke reports giving salicylic acid to twenty-five women during labour, and found it in the urine of the children immediately after birth. In the discussion of this subject at the Leipzig Obstetrical Society, Henning and Ahlfeld mentioned having seen cases where morphia given to the mother undoubtedly injured the fœtus.

There is not time to make any further quotations; enough, however, have been adduced I think, to show that, under certain circumstances, drugs given to the mother undoubtedly find their way, though in small quantity, into the fœtal circulation. No other conclusion can be drawn from the experiments that have been reported.

In the clinical facts which I shall presently bring forward, we judge by the effect only that the medicine reached the fœtus. The inference that the medicine had entered the fœtal organism is, no doubt, open to question. This I must admit, and it would have been very desirable and satisfactory to know for certain whether the drug had actually passed through the partition which separates the vascular systems of the mother and of the fœtus, and had thus acted on the latter. But is it not of great importance for us, as practitioners, to recognize the fact that the fœtus *in utero* is not beyond the reach of physic; that there are medicinal agents (no matter what their *modus operandi* may be) which can exert some therapeutic influence upon it by administration to the mother? This is just the point upon which I wish to lay stress, as it is one of high practical importance and much requires careful elucidation.

The influence which mercury administered to the mother has in counteracting congenital or hereditary syphilis is universally acknowledged; and Dr. Thorburn, in his admirable paper on "The Medicinal Treatment of the Unborn Child," even goes so far as to assert, and supports the assertion by facts, "that we can beneficially treat the unborn child independently, in a sense, of the mother." His second case has a special importance on this ground: that the mother herself never had any detectable symptom of syphilis. Her husband had the disease when he married, and was for a long time under treatment. Her first pregnancy terminated about the eighth month, the child being covered with pustules, and dying in a few hours. Next she had three abortions in succession; then a child near to full term, a pitiable object, which died in four or five weeks. She again had two abortions about the fourth or fifth month, having obstinately declined to take medicine in any form. In her next pregnancy, Dr. Thorburn managed, under various pretexts, to keep up a mild mercurial course nearly the whole time. "The event," he writes, "was in excess of what I anticipated. She has now a fine healthy boy about three years old, who has had no illness since birth."

Dr. Thorburn's experience of chloral and of nux vomica given to pregnant women leads him to believe that the former has a decidedly quieting influence on the fœtus, which agrees with my experience; whilst the latter (nux vomica) has an opposite effect, as judged of by the movements of the child. He also thinks that he has prevented the occurrence of convulsions after birth by the previous administration of bromide of potassium. These are most interesting and suggestive observations, and, though they may not carry conviction to all minds, still they are well worthy of being remembered, and afford much encouragement to the prosecution of this investigation.

It is over thirty years since Sir James Simpson published his memoir on *Placental Phthisis*, in which he recommended the free employment of chlorate of potash during pregnancy. This was certainly an original idea, and the practice has been found very successful by myself and others. Whether the chlorate acts, as Simpson asserts, by rendering the blood more rich in oxygen, and consequently better fitted for the purpose of placental respiration, or whether the salt is really conveyed to the fœtus, are questions that yet remain to be determined; but that this treatment is often successful in preserving the child cannot be doubted.

Dr. Thorburn has pointed out another group of cases in which much apparently may be done by "prenatal treatment." His description of these cases must be given in his own words: "Two parents, often healthy as far as can be ascertained, occasionally one or both somewhat delicate, but neither of them necessarily suffering under any special disease, have in succession four, five, six, or more children, every one of which, almost from birth, evinces great delicacy of constitution. They are invariably anæmic; they are almost equally invariably ailing from something; but you cannot possibly foretell whether that something will be gastric disorder, mesenteric disease, ordinary abscess, or anything else."

For cases of this description, he confidently recommends large doses of iron during pregnancy; and, in the four instances mentioned by him where this treatment was carried out, there was a decided improvement in the ensuing child, and always accompanied by a deeper cast in its complexion.

The cases I am about to narrate tend to corroborate Dr. Thorburn's observations on the value of prenatal treatment, and, as a clinical contribution toward this subject, they are perhaps worth recording.

Case I.—Mrs. R., a tall well-made woman, about twenty-eight years of age, engaged me the latter end of June, 1874, to attend in her labour, which she expected early in September, if she went to the full time. This was her fourth child, and each of her former children was born dead, after easy labours, in the eighth or ninth month of pregnancy. No cause could be assigned for these premature dead births. Both she and her husband seemed quite healthy, and I could not discover anything to justify the faintest suspicion of syphilis. I resolved, therefore, to try the effect of a prolonged course of chlorate of potash and the perchloride of iron. This combination she regularly took three times daily until the setting in of labour. She gave birth to a healthy male child, which she herself nursed. Her menses had left her on December 5th, and she was confined on September 12th; so we may safely infer that her pregnancy was of the normal length.

Case II.—This lady had always been very delicate. In early life, she suffered for years under strumous disease of the hip-joint. Her first child was puny and ill-nourished, and only lived a few days, in spite of everything that wealth or skill could do for it. She consulted me when in the seventh month of her next pregnancy, and I put her on the same treatment as the last patient, giving her chlorate of potash and the liquor ferri perchloridi three times a day, and advising, at the same time, a generous diet. She went to the full time, and had a living healthy boy, now a fine child nearly three years old. In the course of a year, this lady again conceived. No specific treatment was adopted, and she was prematurely confined of a dead child. She has not again proved in the family way.

Case III.—Mrs. G. was confined of her first child when in the eighth month of pregnancy. The labour was rapid, but the child was dead and decomposed. This lady and her husband had excellent health, and neither of them presented any trace of a syphilitic taint. When she had entered the seventh month of her second pregnancy, I put her on the chlorate of potash and perchloride of iron mixture, and continued it steadily until she fell in labour, on April 17, 1875, exactly that day nine months from the last appearance of the catamenia. Her labour was tedious, from imperfect uterine action, and I had to deliver her with the forceps, Dr. Rutherford Kirkpatrick assisting me and administering chloroform. A male child was extracted, who is now as fine a boy of his age as could be seen. As Mrs. G. could not nurse (the secretion of milk being very scanty, and of brief duration), she soon was with child again, and underwent the same medical treatment, with the same satisfactory result, except that the child was a girl, and was delivered by the natural efforts. It is now seven months old.

Case IV.—This lady and her husband were both to all appearances strong and healthy. She was a large stout woman, and first came under my notice when in her fourth pregnancy, her previous history having been as follows: viz., her first child was born alive towards the end of the ninth month of gestation, but was a spare delicate boy of fair complexion. Her second child was born dead in the seventh month, after a short easy labour, in which Dr. Churchill attended her; the third pregnancy ended in abortion at the third month. She consulted me when in the fifth month of her fourth pregnancy. I put her on Simpson's treatment, of the chlorate of potash only, and continued it for four months; in fact, until her labour came on in the beginning of the ninth month. She gave birth to a girl, who is alive and healthy, though not by any means a fine child. Soon after this, she was again in the family way for the fifth time, but miscarried before quickening. In her sixth pregnancy, she was again under my care, and with great difficulty was saved from miscarriage in the third month. Soon after the period of quickening, I put her on the use of a mixture composed of

chlorate of potash, tinctura ferri perchloridi, spirits of chloroform, and infusion of calumba. This agreed very well with her, and she kept on taking it three times a day until her labour began, which it did exactly nine months and eight days from the close of the last menstruation. As I was myself engaged with another patient at the time, Dr. Denham attended her for me. This child was a strong healthy girl, and, though reared artificially, she is thriving remarkably well, and is now nearly four months old.

Case V.—This lady I saw for the first time when in her tenth pregnancy. All her children, except one, which survived its birth for a few hours only, were dead-born at the seventh or eighth month. In her ninth pregnancy, labour was induced at the end of the seventh month by Dr. Evory Kennedy, but without the effect for which it was intended, viz., to save the child. She was about six months and a half advanced in her tenth pregnancy when I commenced treatment. At this time, she was stout and in fairly good health, but very low and despondent, as she had quite given up all expectation of ever having a living child. I should mention that, early in their married life, her husband had symptoms of constitutional syphilis, for which they both had undergone treatment at the hands of Ricord. I put her on the mixture already described, viz., the chlorate of potash and perchloride of iron, three times a day, together with a generous diet and moderate allowance of Burgundy. This course was persevered in without interruption until she fell in labour. She went to her full term. The child was a boy, alive, but lank and ill nourished. He was not deficient, however, in vital power, and, with the aid of a good wet nurse, he has grown to be a fine healthy infant, and is now over a year and a half old. This same lady is, at the present time, in the ninth month of her eleventh pregnancy. She has been taking the iron and potash mixture for nearly three months, and, when I last saw her, quite recently, she reported the fœtus to be lively and strong, judging from its vigorous movements. I shall just relate one case more, and it shall be the last.

Case VI.—A tall woman, of a decidedly weak delicate constitution, was confined of her first child in the beginning of the ninth month. Some hemorrhage preceded delivery, and the child showed no sign of life when born; but, whether its death was the consequence of the hemorrhage or not, is doubtful. Her second pregnancy ended at the seventh month, when a dead, partially decomposed fœtus was expelled. Her third pregnancy ran the same course, and had a like termination, in consequence of which she was advised by Dr. Drummond, of Nice, to have labour induced in the seventh month, should she again become pregnant. A few months after this last (third) confinement, I first saw this lady, and treated her during some months for abrasion of the os uteri and leucorrhœa, accompanied by that state of general debility and want of tone so constantly present in these cases; in fact, the *cachexia uterina* of Hoffmann and other old writers. By and by, she again proved with child, and, soon after quickening, I began to give her the chlorate of potash and tincture of the perchloride of iron; but had to vary my formula several times and try different adjuvants to reconcile her stomach to the medicine, but eventually with complete success. A generous diet was also enjoined, with two or three glasses daily of Burgundy or Carlowitz. This lady is now in the ninth month of utero-gestation, and is daily sensible of the vigour and activity of the fœtus, whilst her own health is better than it has been for years.

These cases do not require any commentary. Of course, no positive conclusion can be drawn from any one of them; but their cumulative evidence is considerable, and certainly entitled to some weight in the question before us. Besides the foregoing, I have two other patients in the eighth and the ninth months of pregnancy respectively, one of whom has had three premature dead children and the other two. Both these ladies, like the one last mentioned, have now passed the period of pregnancy at which labour occurred before, and both enjoy unequivocal evidence of the vitality of the fœtus. These two, with those previously related, represent all the cases in which I have employed the same treatment for the preservation of the fœtus.

Let me now, in conclusion, very briefly sum up the heads of evidence in support of the possibility and reasonableness of fœtal therapeutics.

1. It is a well-known fact that many diseases, *e.g.*, syphilis, measles, smallpox, scarlatina, ague, etc., contracted by the mother *subsequently* to conception may be communicated to the fœtus *in utero*.

2. Careful investigations have demonstrated that various medicines given to a pregnant woman may reach the fœtus, and be found in its blood or secretions.

3. Clinical observations establish the fact that therapeutical effects on the fœtus *in utero* follow the administration of certain medicines, when given to the mother for a sufficient length of time before the accession of labour.

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When not to give Iron.

Dr. J. MILNER FOTHERGILL, in an interesting article on this subject (*Practitioner*, Sept. 1877), says: The conditions which call for the administration of iron are *par excellence* those where debility is combined with anæmia. In these conditions iron acts as a general tonic as well as increasing the number of the red-blood corpuscles. But there are certain circumstances which contraindicate the use of iron, and which are deserving of note and remembrance. It is not enough to say that in conditions of plethora and vascular fulness iron should not be given. There are other conditions in which it is well to resort to other tonics, and even to other remedial agents altogether. Pereira says that the contraindications are "great strength and activity of organs, excessive tonicity (characterized by a firm and tense condition of the solids), and redundancy of the red corpuscles of the blood—as in general excess of the blood (plethora), in fever, in acute inflammation, and in the sanguine temperament. To these may be added, congestion, or a tendency thereto of important organs, especially of the brain and lungs, and intestinal irritation." Again he says: "administered in large quantities, or when the alimentary canal is in an irritable condition, all the compounds of iron are liable to excite heat, weight and uneasiness at the precordia, nausea, and even vomiting, and sometimes purging."

From the well-known action of iron in increasing the red-blood corpuscles no one would now think of giving iron in states of vascular fulness. It is unnecessary to say anything further on this subject. Then again conditions of vascular excitement are unsuited for the exhibition of iron. As long as there is rapidity of pulse combined with rise of temperature, so long must iron be withheld in the treatment of acute disease. When the convalescence is well established, when the pulse may be fast and small, but is without excitement; when the temperature is perfectly normal or below it; when the skin is cool, the face pale, and the tongue clean, then, and not till then, should the administration of iron be commenced. If it produce any gastric disturbance, or headache, or feverishness, it should either be totally abandoned for a time, or the dose be much reduced. Vegetable tonics, as quinine or strychnine, together with mineral acids, the hydrochloric, the phosphoric, or the hydrobromic even in some cases, should be given instead; and then the iron, in small doses at first—to be taken after meals, especially dinner. So administered iron can often be tolerated, when it disagrees given in the usual way in combination with the vegetable tonics. The same rule holds good of the resort to iron when the pyrexial stage of ordinary phthisis has passed away. The tonics and acids must be given before food, and the iron after, either as the tincture of the muriate in acetate of ammonia, the carbonate, or Niemeyer's pill of sulphate of iron with carbonate of potash in a drop of syrup. But as long as the tongue is thickly coated, or red and irritable, it is well to withhold chalybeates altogether.

This is very true of phthisis. However much the general pallor, the lack of tone and loss of power seem to call for iron, it is useless, and sometimes worse than useless, to give it unless the tongue be clean, without irritability. If the tongue be red and irritable, bitters with bismuth are to be adhered to, until all intestinal irritability has passed away, of which the condition of the tongue is the best index; if the tongue is loaded with fur, bitters and acids are to be preferred with a little sulphate of magnesia, or a vegetable pill at bedtime; or

both if necessary. The gastro-intestinal canal must be got into a normal condition, neither too irritable, nor sheathed with a layer of epithelium, as indicated by the fur upon the tongue, before either chalybeates or cod-liver oil can be satisfactorily prescribed. About this my experience at the Victoria Park Chest Hospital constantly makes me more and more positive.

In ordinary convalescence from acute conditions it is well to commence with the lighter preparations, the ammonia-citrate, the tartrate, or the citrate of iron and quinine; afterwards the muriate or the sulphate will be tolerated equally well. But these latter forms often disagree during the early stages of convalescence. At times too the mixture of the sulphate of iron, with quinine, and a few drops of dilute sulphuric acid, is found to be heating, and each dose to make the patient uncomfortable, especially in warm weather; here the addition of a little sulphate of magnesia, not necessarily to the extent of producing purgation, will at once remedy the uncomfortableness so induced.

In atonic gout also iron is commonly of no service, and makes the patient uncomfortable. In the sanguine and plethoric forms of gout iron is never indicated. But where there is evidence of chronic renal disease with anæmia, and even with albuminuria, then it commonly seems desirable to administer iron in some form. Very often, however, it distinctly disagrees. It is well to see that there is no acute action going on anywhere, that the joints are cool, even if still enlarged, before commencing with chalybeates. The bicarbonate of potash, or the potassio-tartrate of soda, with a little nux vomica, in infusion of buchu, with a liberal draught of water after each dose, are the medicinal agents to be adhered to until all is perfectly quiet. When the tongue is clean, the skin cool, and there is no evidence of much acidity, then small doses of iron may be commenced with. But for some time the iron and the potash should be taken together; if the potash is left off the iron disagrees. Especially is this the case with elderly persons. It may be laid down as a broad rule that the toleration of iron diminishes as the age increases. With old persons iron comparatively rarely agrees, and then only in very small doses: while young children take iron well, and it often is well borne by them in conditions which in the adult distinctly forbid its use. But as age advances the system seems to grow less tolerant of the drug in any form; and the dose must be much diminished. In advanced life, in convalescence after acute disease, or paroxysms of gout in any of its forms, chalybeates have often to be abandoned, and alkalies, as potash or ammonia, with vegetable tonics and bitters, substituted in their stead. It would seem that the power of the digestive organs to assimilate iron is strongest in infancy—except it be very young children and babies—and that it diminishes, until in advanced life the blood manufactured often appears to be interfered with rather than assisted by chalybeates. Consequently with old people it is often better to give them tonics with alkalies and easily digestible food, than to give iron, when it becomes desirable to give a fillip to their nutritive processes.

There is one condition where iron is absolutely forbidden, and that is the condition known as biliousness. As long as there is a foul tongue, a bad taste in the mouth, and fulness of the liver, with disturbance of the alimentary canal, iron is to be prohibited; it is not only that it is of no service, it positively does harm. It aggravates all the symptoms, and intensifies the condition. Iron undoubtedly increases the oxidizing processes, but somehow or other in biliary disorders it does not suit. Defective oxidation is at the root of these states, and yet iron does not agree with such patients. As long as any of the symptoms remain, and there is any fur whatever on the tongue, iron must be withheld. The patient may be anæmic and iron seem to be urgently indicated, but it will do no good until the system is in the proper condition to receive it. Sir Joseph Fayrer's Indian experience is in full accord with this expression of opinion. He kindly furnished me with some notes on Indian and tropical maladies for my recent work *The Practitioner's Handbook of Treatment*, and in speaking of the treatment of hepatic congestion accompanied by anæmia, he lays stress upon the resort to purgatives and vegetable tonics, and the avoidance of iron, until the biliary congestion is removed. "*When the portal circulation is relieved*, some preparation of iron may be useful." (The italics are

his, not mine.) The liver must be thoroughly unloaded by alkaline salines first; then some strychnia and nitro-muriatic acid may be taken in the day, the salines being only taken first thing in morning; and ultimately, when the liver is once more working efficiently, chalybeates may be prescribed. But it seems that the oxidizing power of iron embarrasses rather than aids the liver when working inefficiently; and when iron is given, the morning purgation by salines, mineral waters, or other means, should still be maintained. By attention to these points much may be done for bilious patients; aye! and much discredit avoided. Whenever, indeed, there is disturbance of the gastro-intestinal canal, bilious or other, chalybeates are contraindicated, and if given cause discomfort, nausea, and not uncommonly a pyretic condition. The digestive organs must be got into good working order before iron is administered, if it is to be properly assimilated. When given in large doses iron always blackens the stools, but if given in moderate doses and well assimilated this blackening of the stools is not so marked. The colour of the stools, then, may be utilized as an indication how far chalybeates are assimilated and are likely to be useful.

There are two different states found in women where iron is either totally contraindicated or to be given with great caution. The first is the condition of amenorrhœa in florid, plethoric persons. In such cases, especially if the patient be of tense fibre, depletory measures are to be resorted to, as local bleeding and free purgation. The other is the opposite condition of menorrhagia in certain females. Of course no one would think of resorting to any form of iron, however astringent, in those cases of menorrhagia which are due to a state of general plethora. But there are cases of menorrhagia associated with pallor and debility, where the usual compound of iron and extract of ergot is not so useful as is a non-chalybeate treatment. In these cases it is not any imperfection in the processes of blood-manufacture which is to be remedied, for the blood is made rapidly and quickly, only to be lost at each menstrual period. An irregular process of rapid blood-making with still more rapid blood-loss is established, and requires its appropriate treatment. It is undesirable to stimulate blood formation by chalybeates here, for the greater the increase in the bulk of the blood, the more excessive the catamenial loss; and to give iron is but to aggravate the condition. It is here desirable rather to limit the rapidity of the blood formation, so that when the general vascular turgescence of the menstrual period comes, it will not find the bloodvessels too distended with blood. This will lead to diminished catamenial loss, and so the blood-waste will be economized. For in these cases it is the proper practice to lessen the loss rather than to stimulate blood-formation. During the interval a little sulphate of magnesia, with dilute sulphuric acid, in some infusion of a vegetable astringent forms an appropriate medicinal agent, and should be given along with a restricted dietary. At the periods the dose might be increased and the patient kept quiet, while all aliment should be cold. By such a plan the irregular condition of rapid blood-formation and blood-loss will be converted into a steady state of slower blood-formation with diminished loss. The same rule holds good of other periodical hemorrhages, and especially of some forms of hæmoptysis.

Even in cases of menorrhagia where it is necessary to encourage blood-formation during the interval, it is often well to cut off the chalybeates a day or so before the menstrual molimen, and to substitute for it the mixture just mentioned above. By such plan the blood-waste by the catamenia is economized, and the necessity for great blood-formation minimized. "There is poverty from waste and poverty from want," as Dr. Mitchell Bruce pithily puts it, and each requires its own appropriate treatment. At times with women there is both, and then combined measures are required.

Finally, the consideration of iron here is confined to its use as an hæmatic, its use in pyrexial affections as erysipelas or scarlatina not being included. When used as an hæmatic, it is clear that certain points must be kept in view. First, that the digestive organs be in fair working order, and second, that certain precautions be taken as to its administration when it is necessary to resort to it.

Since writing the above, Dr. Hughlings Jackson tells me that at one time he did not acquiesce in Brown-Séquard's idea, that iron does not suit epileptics, but that a more extended experience has convinced him that it is so. When iron is given to epileptics who are anæmic, it may improve the condition of the blood, but that, while doing so, it increases the tendency to fits. It may improve the general condition, but it aggravates the epilepsy.

Medicine.

Effects of High Temperatures on the Organism.

Dr. M. Litten (Virchow's *Archiv*, May, 1876) says, that, as the increased temperature is the most striking phenomenon of, though not identical with, fever, the changes in the organs and the organic processes which take place in this state are of the highest interest. The animals employed in his experiments were guinea-pigs, as they were found to survive longer than any others. The apparatus which he used was a covered double-walled vessel of copper, 27 cm. in diameter, and 22 cm. in height; between the two walls was water, by warming which the air inside could be raised to any temperature desired. Three air-tubes at the sides acted as ventilators. In the cover were three holes for the reception of thermometers and gas-regulators. Heat was at first maintained by a gas-jet, kept at a constant height by a Bunsen's regulator; but as this only succeeded partially, oil- or spirit-lamps were substituted, and with some trouble a constant temperature was attained. The maximum temperature in which the animals could remain alive for a long time, varied between 36 and 37° Cent. (96.8 to 98.6° Fahr.), but in a very well-ventilated apparatus, animals may be kept all day at from 39 to 40° Cent. (102.2 to 104° Fahr.). He employed a large number of guinea-pigs in these experiments, and they were always exposed to a temperature of 36° Cent. in moist, or 37° Cent. in dry air. The results were always the same. The temperature was measured *in ano* before the animal was placed in the apparatus, and then daily many times up to its death. The examination of the body was always made immediately after death, provided the animal died during the day.

The constant change observed was fatty degeneration, which, at earliest, supervened after 36 hours, and always after lengthened observations attained a quite excessive degree. The liver always showed this change first, next the heart and the kidneys (two or three days)—the first, in some cases, even earlier. The next were the striped muscles, the respiratory muscles (diaphragm and intercostals) earlier than the others, and often as early as the heart. The longest duration of any observation was five to six days.

The following changes were observed in an animal which had remained 128 hours in the apparatus at a temperature of 36° Cent. (96.8° Fahr.) The liver and kidneys were very yellow; the heart and muscles showed no naked eye changes. Microscopically, the liver showed all the cells filled with fatty globules, which hid the nuclei; rarely there were only two or three globules which permitted the nucleus to be seen between them. The kidneys had their tubules often filled with fatty granules, and in other places the epithelium was very fatty, so as to hide the nuclei; the glomeruli were well preserved, and showed a slightly granular condition; the organs were very anæmic. The muscles were throughout altered; the most marked changes being in the walls and papillary muscles of the heart; the entire sheaths of sarcolemma were filled with fat globules, so that the contractile substance could not be recognized. The diaphragm and intercostals came next in degree of affection, which was less pronounced in the rest of the muscles; where it was greatest the transverse striation was lost, in other places the drops lay in rows between the fibrillæ. The muscle-nuclei showed a slight degree of fatty change. The vessels were only

altered in places, and most so in the choroid plexuses and the pia mater; less so, but still distinctly, in the smaller branches of the coronary arteries. The fat globules were generally in the adventitia, fewer in the muscular coat, and only in places showed themselves in the nuclei. The brain and cord showed no abnormality. The lungs were intact, except for numerous small hemorrhages. The alimentary canal presented slight changes, only a little fatty degeneration of the gastric glands. In the blood, the peculiar blood-crystals of the guinea-pig were observed, and also irregular colourless masses, which were studded with nuclei and oil-globules; otherwise, it appeared quite normal. This case showed the changes in the highest grade, but they never failed when the animal had been thirty-six to forty-eight hours in the apparatus.

These changes were of two kinds; in one filling the cells, in the other filling the sheaths of connective tissue, so that their normal contents could not be recognized. The liver was like the fatty liver of man, with the difference that it looked much yellower to the naked eye. The masses in the blood were identified with those seen in the blood of typhus and other infectious diseases. The changes in the bloodvessels were constant, but never led to hemorrhages; especial attention was paid to this point on account of certain forms of hemorrhage being commonly attributed to a hypothetical fatty degeneration of the bloodvessels. The wasting of the animals was very remarkable, and out of all proportion to the wasting which healthy animals without food undergo at normal temperatures. At the end of three days, the animals always received some food. It might be said that these appearances were not pathological; on this account, the author used guinea-pigs, whose tissues contain very little fat, and only employed full-grown animals, as in young ones, especially in the liver, a high degree of fatty change is present. The state of the muscles surpassed in a high degree anything that could be regarded as physiological.

To estimate the amount of carbonic acid inhaled, the author used the same apparatus made absolutely air-tight. The air was sucked out of the box by a Bunsen's aspirator, and the air used measured by a gasometer. The estimation of the carbonic acid was made according to Pettenkofer's method. The fallacies in this method are of the smallest. He raised the temperature to 36 or 37° Cent. (96.8 to 98.6° Fahr.), and estimated the carbonic acid as soon as he was sure of an approximate constancy of the animal's body temperature; this occurred in from six to eight hours, but by that time they had not reached as high a temperature as they were able to stand. Previously, the normal exhalation of carbonic acid had been estimated on the same animals, and they had been starved for fifty hours before the commencement of the investigation. He gives the results of thirteen observations in a table. In every case, the amount of carbonic acid exhaled was diminished, sometimes 50 per cent. or more. This differs from the results of Sanders-Ezn and Pflüger, but agrees with those of Röhrig and Zuntz. Sanders' animals had their heads free and breathed cold atmospheric air, but the author's were shut in the box and breathed the warm air contained in it. He thinks that the changes produced in the red blood-corpuscles by high temperature explain the diminution of carbonic acid by the decrease of oxygen absorbed. According to M. Schultze, Werthein, and Manassëin, the red corpuscles in high temperature are destroyed, being smaller and fewer. This is in unison with Bernard's observation, that whereas venous blood ordinarily contains 12 to 15 per cent. of oxygen, that of animals subjected to high temperatures contains only 1 to 3 per cent. Moreover, A. Schmidt found the blood in the heart of a guinea-pig, which had died under high temperature, free from oxygen.

Voit and Pettenkofer have thought it probable that albumen might be converted into fat, whenever on its destruction there was not sufficient oxygen to oxidize it all to carbonic acid and water; the remaining becoming fat after the nitrogen was set free. In this way, the fatty degeneration, diminution of carbonic acid, and increase of urea excreted, may all be connected with the diminution of oxygen absorbed, resulting from the changes in the blood-corpuscles due to the high temperature. Litten seems to have made no observations on the increase of urea, taking it as established. He proceeds to apply these results to the pathology of fevers, and considers that any differences between

them and those obtained directly from fever patients depend on something else than the high temperature in the latter. He also applies them to the fatty changes in phosphorus poisoning, and in poisoning by carbonic acid (he has observed marked fatty changes in animals subjected to chronic carbonic acid poisoning), also to anæmia and phthisis.—*London Med. Record*, Aug. 15, 1877.

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On Hydræmia and Hydræmic Œdema.

Drs COHNHEIM and LICHTHEIM contribute to Virchow's *Archiv* (Jan. 1877) an interesting paper on this subject, of which the following is an abstract.

The cause of the œdema in Bright's disease and in some other conditions has given rise to much discussion. Bright believed it to depend on a watery state of the blood due to the loss of albumen through the kidneys. It soon became clear, however, that this explanation would not suffice. The œdema in no way accurately corresponds with the amount of albumen lost, as we see in acute scarlatinal dropsy. On the other hand, there is often great loss of albumen by suppuration with no œdema or very little. Here came in the theory of "hydræmic plethora" to account for the œdema. With the loss of albumen there is often a diminution in the quantity of urine. The water being retained, the blood is relatively increased in bulk, and at the same time unduly watery, while the loss of albumen renders it still more dilute; so that there is hydræmia with plethora. Majendie seemed to have nearly established this theory when he found that by injecting water into the veins he produced œdema. But this experiment is not a pure one, because water dissolves the blood corpuscles and thus alters the constitution of the blood. The present authors started from Majendie's experiments, but in order to avoid the destruction of the blood corpuscles, they injected large quantities of a solution of chloride of sodium (0·6 per cent.) instead of water. By this means they produced a hydræmic plethora, the solid constituents in a given bulk of blood being much reduced, while the entire bulk of blood was much increased. This hydræmic plethora did not produce any increase of the arterial tension, and in this respect the results agree with those of Worm Müller, who found that simple plethora produced by the injection of defibrinated blood did not increase the arterial tension. This is opposed to Traube's view of increased arterial tension. The injection produced an elevation of the venous tension, but this was nearly always temporary, or, if permanent, very small in amount. There was great increase in the rapidity of the blood-current, as determined by microscopic examination of the tongue, web, and mesentery of the frog, and the mesentery of the rabbit and dog. The secretion from the salivary glands, stomach, intestines, liver, lachrymal glands, and kidneys was greatly increased, and there was also a great increase of the flow of lymph in the thoracic duct. While there was this increased quantity of lymph in the duct fed by the viscera, there seemed to be no excess in the amount of lymphatic fluid from the skin and muscles of the limbs. The distribution of the œdema corresponded with this: there was no œdema of the skin, but there was great ascites and œdema of the following parts: the mucosa and submucosa of the intestines, the lymphatic glands of the mesentery, the pancreas, the kidneys, the gall bladder. It is clear that these observations do not throw any direct light on the œdema of Bright's disease, as the œdema was absent from the parts affected in Bright's disease—namely, the skin, and present where it does not exist in that disease. It would seem, therefore, improbable that the œdema of Bright's disease is to be accounted for by simple hydræmic plethora. The observations may, however, throw some light indirectly on the œdema of Bright's disease, and in this regard merit closer study. The œdema in the organs in which it was found is not due to increased arterial pressure, because that was not present, but it may be accounted for by a distension of the vessels beyond their elastic resistance. It is to be noted that all the organs where œdema existed are normally concerned in removing water from the blood. The water in the blood being increased, there is naturally an increased transudation. We may suppose that the vessels of these parts have a special structure related to this function of

theirs, and that they allow of the transudation of water more readily than the vessels of other parts. It will be observed thus that three conditions are concerned in the production of œdema,—hydræmia or wateriness, plethora or increased bulk, and a special condition of the vessels, which in these parts is related to the function of the organs. Now, in Bright's disease the probability is that there is an alteration of the vessels of the skin. It does not seem probable that the normal vessels of the human skin are materially different from those of dogs and rabbits, although the fact that man sweats more than these animals might suggest such an explanation. The vessels seem to have undergone a pathological change in Bright's disease. In illustration of this, it is to be observed that in the experiments of our authors, œdema did occur in the skin if the vessels had sustained injury. Thus, in a dog whose muzzle had been injured by tying it up, there was great œdema of the skin around the mouth. Then if the skin were pencilled with iodine or exposed to the heat of the sun, œdema occurred. In Bright's disease the nature of the alteration of the vessels of the skin is not known, but certain facts seem to point to a certain correlation of the kidneys and the skin as to pathological processes. Thus in scarlatina the rash and desquamation show that the vessels are specially affected. Then there is the well-known relation of the function of the skin to the secretion of urine. And lastly, we have the nephritis occasionally set up by burns, and experimentally in animals by varnishing them. In the œdema of cachectic patients, we may suppose that the prolonged hydræmia may have injured the vessels.—*Glasgow Med. Journal*, Oct. 1877.

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On Œdema (Myxœdema) in the Cretinoid Condition of Adult Women.

Mr. William M. Ord, Physician to the St. Thomas's Hospital, described, at a late meeting of the Royal Medical and Chirurgical Society (*Lancet*, Oct. 27, 1877), five cases in which the symptom first apparent was general anasarca without albuminuria. The anasarca was, however, different from the anasarca of renal affection, in that while it was general the parts affected did not pit on pressure, and, as there was no gravitation of any fluid, remained equally swollen at all times. In all the cases there was remarkable thickening and broadening of the features, and a slow articulation; there was marked slowness of perception, slowness of thought, and slowness of action, without any actual impairment of intellect. The cases all exhibited the pink tinge of the cheeks, and the spade-like state of the hands described by Sir William Gull in his paper on a Cretinoid condition supervening in Adult Life in Women, and it is remarked that all the cases seen by the author have been in women. The skin generally was harsh and dry, as well as swollen and semi-transparent. There was in all the cases an absence of natural perspiration. There were in none of the cases any indications, either in the urine or in the organs of circulation, of the existence of renal disease. But in two cases which ended fatally after several years of observation renal symptoms appeared before death; that is to say, with the occurrence of fluid anasarca the urine became albuminous, the arteries became tense and thickened, and the heart overgrown. In one case a post-mortem examination was obtained. The kidneys were found to be of normal size, rather tough in consistence, and not notably discoloured. The cortical portion was a little wasted, but the capsule was not adherent. The arteries were everywhere greatly thickened, there was much atheroma in the larger vessels, and the heart was much hypertrophied on the left side, weighing 16½ ounces. There were no other important naked-eye appearances, excepting in the thyroid gland, which was reduced to a third of the natural size, and was tough and fibrous-looking on section. Under the microscope a remarkable overgrowth of the fibrillar element of connective tissue was found in all parts of the body, the fibrils being separated from one another by much larger intervals than usual, the interspace being filled by a transparent material yielding mucin, an excess of the normal cement, with excess of nuclei. Reviewing the cases, the singular train of nervous symptoms are attributed to failure of the action of the skin, and to general want of peripheric stimulation of the nerves. And this

condition is traced again to the mucous œdema by which all nerve-ends were encased. It is argued that a steadily maintained stimulation of the central nervous system is a condition of the maintenance of health in the great nervous centres, as in the body at large; and that in such cases as are here described, there is an isolation from external influences comparable in a less degree with what is effected by shaving and varnishing a rabbit. The symptoms observed in these cases are compared, one by one, with the symptoms described by Sir William Gull in the paper referred to, and their identity is held to be established. They are then compared with those of cretinism, and again a remarkable agreement is demonstrated. Reference is here made to Mr. Curling's paper on two cases of absence of the thyroid in children suffering from mental infirmity, and in Dr. Hilton Fagge's paper on Sporadic Cretinism in England, where, again, in conjunction with cretinoid symptoms in children, the thyroid gland was absent, or could not be felt. The thyroid gland in the case examined after death having been found to be practically annihilated, owing to the encroachment of the myxœdema upon its natural structure, this case is held to afford confirmation to Dr. Fagge's argument set forth in the above paper. In the last place, it is suggested that such a condition existing early in life, before the development of the intellect and of the organs related therewith, would cause arrest of development through failure of the guiding sensations and stimulations. It is held that the natural process of development of the central nervous organs is directly dependent upon exercise of these organs, set going by impulses from the periphery; that the surroundings of the growing animal "lick it into shape," so to speak; and that the intrusion of an insulating medium will tend to arrest development in proportion to the completeness of insulation. Observation shows that many cretins are "œdematous," and that an œdematous state of the skin is often an indication, in particular cases, that the child so affected will become a cretin. The paper, therefore, suggests that more extended observation may possibly reveal some such connection in cretinism, as is here asserted, of the cretinoid state of adult women. The ultimate course of the condition, here called myxœdema, remains unexplained.

Dr. HILTON FAAGE said the paper confirmed the observation of the absence of thyroid gland in sporadic cretins. A double identification was necessary—namely, to identify this "cretinoid" condition of the adult with the sporadic cretinism of children, and to identify the latter with the disease endemic in the Swiss valleys. He thought the first point established, and since hearing the paper he was more than ever persuaded that the adult condition first described by Sir W. Gull resembled the affection met with occasionally in children. Some years ago he had under his care a patient closely resembling the one shown at the meeting, and in that case there were fatty tumours in the triangles of the neck, and if to that be added the wasting condition of the thyroid as observed by Dr. Ord, the analogy between the adult and infantile condition was complete. Dr. Fagge then discussed the question of the identity of sporadic and endemic cretinism. The occurrence of fatty tumours in the neck in the former variety and absence in the latter was not invariable, for Dr. Beach had related a case (*Path. Trans.*, xxvii., p. 316) in which these fatty tumours had disappeared before death; and it was quite possible that the miserable condition of the cretins in the Pyrenees would favour the wasting of these growths, which had not yet been found in the endemic disease. The premature synostosis of the basi-sphenoid and basi-occipital had been described by Virchow as an essential factor in the production of cretinism. This early union produced generally a vertical direction of the *clivus*, but in a case examined by Dr. Fagge this was more horizontal than usual. The early ossific union would not, however, prevent moulding processes, although it might arrest growth. Again, the thyroid gland, although usually absent in the sporadic cases, sometimes persists, as in one of Dr. Beach's cases and one of his own. The development of cretinism in certain districts might be explained by the rapid deterioration that occurs in the inhabitants of the Alpine valleys; a deterioration so rapid, that in the Val Pellini, no family endures for more than five generations; and in the same way a deterioration of the thyroid gland and consequent development of cretinism might occur in this country. But he could not accept the

view brought forward by Dr. Ord, that the myxœdematous condition of the skin was a primary cause of the cretinoid state. He inquired whether analysis had been made of the skin in simple œdema to ascertain the amount of mucin contained in it.

Dr. Heywood Smith inquired whether there was any marked disturbance of the catamenial function in Dr. Ord's cases, or whether in any of them the uterus was subinvoluted.

Dr. Chas. West thought it premature to apply the term "cretinoid" to this condition. In England we know but little of endemic cretinism; even in Derbyshire, where goitre is endemic, cretinism does not prevail more than elsewhere. Sporadic cretinism was by no means limited to the poor; and quite recently he had seen a child, eighteen months of age—a cretin, and the co-twin of a perfectly developed child. It was not uncommon to meet in infants with many of the characters of cretinism associated with cyanosis, or other conditions affecting healthy development; but in the cases related by Sir Wm. Gull and by Dr. Ord the intellectual condition was only part of a profound constitutional state in which many organs were affected, and which culminated in renal disease. Dr. West concluded his remarks by protesting against the premature adoption of a definite nomenclature for conditions the nature and origin of which have still to be ascertained.

Dr. Ord said that in his cases the idea of cretinism was not at first conceived. He regarded them as examples of dropsy without albuminuria; but as they progressed, and the lethargic condition of mind became more and more marked, he was led to associate the cutaneous change with the cerebral defect. In the case examined after death the thyroid was reduced to a mass of mucus-yielding, pulpy tissue. He explained that observations were being made, at his suggestion, upon the amount of mucin yielded by dropsical skin; and as for healthy skin, the quantity of mucin found therein was insignificant. There did not seem to be any relation to uterine disorders in the cases he had seen. In reply to the President, Dr. Ord defended the introduction of names which did not involve theories, but simply denoted ascertained conditions; the word "cretinoid" was simply used to denote a parallelism between the mental condition of these adults and that of the cretin children; whilst "myxœdema" expressed simply the actual state of the skin. It was quite possible that other states besides this one might lead to the same mental condition.

Gonorrhœal Rheumatism.

From a clinical lecture by Prof. Gosselin on this subject, reported in *Gaz. des Hôp.*, No. 108, we take the following observations:—

A man, aged eighteen, was admitted to the Charité with acute pain in the right knee, accompanied by swelling and considerable effusion. The pain dated back five days, came on suddenly, without prior rheumatic history, and rapidly acquired its present intensity. Appetite and sleep had disappeared, and yet, in contrast with such an assemblage of symptoms, there was but little fever. The sudden appearance and rapid succession of these phenomena are to be noted as only occurring in two affections—ordinary rheumatic arthritis and blenorrhagic arthritis. In the former of these it is rare to find such excessive pain and considerable swelling, and especially is it so for these to persist five days in one important joint without other joints being also affected. Even if other joints now become implicated, still the fact of this condition having persisted for five days shows that the case is not one of articular rheumatism. This localization in one joint is a character of gonorrhœal arthritis; and on examining the man's urethra, obvious signs of inflammation were found. But in this man the gonorrhœa only dated a week back, while gonorrhœal arthritis usually appears only at about the fifteenth or twentieth day.

Much discussion has taken place in recent times as to whether such an affection as "gonorrhœal arthritis" really exists; that is, whether there is an articular affection having a special connection with gonorrhœa, or whether the affection is not merely an attack of articular rheumatism coinciding with the

urethral lesion. Lorain even maintained that there is a variety of rheumatism that coincides with a disease of the genito-urinary organs, and which he termed "uro-genital rheumatism." Both doctrines, in fact, are well founded, for it is indubitable that acute articular rheumatism may occur in the subjects of gonorrhœa without our being able to say that the gonorrhœa has exerted on them the slightest influence, and which pursue their course just as do cases of ordinary acute rheumatism. Like in this, it may affect the heart and its membranes, and may terminate in the return of the parts affected to quite a normal condition. But there are excellent reasons for admitting that there is also an arthritis intimately connected with gonorrhœa, and due to a special intoxication proceeding from the urethra, the effects of which are manifested on an articulation. This is a theory not demonstrable, but it is a fact that there is a variety of arthritis proper to the subjects of gonorrhœa, which differs essentially from other articular rheumatisms. It is characterized by its sudden onset, and the rapid appearance of the signs of severe inflammation, very great heat and swelling, the severest pain, and localization in one joint, or, if several joints are affected, one of these (usually the knee) suffering with peculiar intensity. These inflammatory phenomena also present this peculiarity, that they are not in general complicated by cardiac lesions. Another characteristic of this special arthritis is that it is of much longer duration than acute rheumatism. While the latter may last for fifteen or twenty days, gonorrhœal arthritis will persist for ninety, one hundred, or one hundred and twenty days. The former terminates by resolution, leaving no traces of its presence in the joints; while the latter often ends in anchylosis. Congestive at first, it becomes plastic, giving rise to neo-membranous exudations, which become organized within the joint and in the substance of the synovial membrane, and are accompanied by destruction of the articular cartilages. Another characteristic is, especially when the knee is the seat of the arthritis, that it is very often accompanied by flexion of the joint, which, if not guarded against, leads to deformity of the limb. This vicious attitude, due to muscular contractions, plays a very important part in the disease, disposed as it is to terminate in anchylosis. All these conditions existed markedly in the patient under consideration, except the muscular contraction, the absence of which was probably due to the recent occurrence of the affection. In him the pain especially was extremely severe, resisting all the various means employed for its relief. In many cases it thus resists the action of narcotics, and always returns very quickly after the operation of these has been exhausted.

It is of great importance that we should recognize this gonorrhœal form of arthritis, in order that it may be effectually treated. When, for example, it affects the hip-joint, it may lead to a spontaneous dislocation in consequence of the enormous amount of effusion which accompanies it, and which, unfortunately, it is impossible to ascertain. The researches of Petit, Bonnet, and Parise have sufficiently proved the possibility of this accident for our attention to be aroused in regard to it. What is of equal importance to be understood is that the pain may lead to a contraction of the muscles, which will give to the limb a vicious position; and, if we do not take care, it will remain fixed in such position, owing to the tendency of this variety of arthritis to terminate in complete or incomplete anchylosis, abolishing or diminishing the movements of the limb. What is to be done, then, in order to relieve the pain and prevent this termination? The first thing is to secure rest in a good position; and to this end the limb in this case has been rendered immovable on a splint, so as to prevent flexion. And it is, perhaps, because the limb has been placed in this forced extension, that the patient complains of such excessive pain. It is certain, in fact, that flexion mitigates the pain; and it is in order to relieve this that patients instinctively adopt this vicious position. In these cases, also, Prof. Gosselin is in the habit of applying leeches, and would have resorted to them in the present one but for the fact that erysipelas was prevailing in the ward. He therefore substituted cupping, which is less often followed by this complication. The pain will be combated with narcotics, and especially morphia injections; and if the suffering is not abated, and seems to be connected with the enormous swelling due to the great effusion, puncture of the

joint, as advised by some surgeons, may be tried. This is a procedure, however, which Prof. Gosselin has never yet had recourse to, fearing to add to the existing malady a traumatic lesion, which might, in certain cases, favour the passage of a simple congestive to a purulent form of synovitis. Still, as this form of arthritis has very little disposition to terminate by resolution, the operation may be undertaken without much fear, care being taken to close the aperture and exert slight compression on the joint by means of a layer of cotton and a bandage. Moreover, copaiba, cubebs, and alum have been given to this patient, as to the ordinary subjects of gonorrhœa, in the hope that, by modifying the nature of the urethral discharge, the arthritis dependent on the urethra might also be at the same time modified. This, however, is a purely theoretical way of proceeding, and Prof. Gosselin is in possession of no fact which demonstrates in a positive manner its practical utility.—*Med. Times and Gaz.*, Oct. 27, 1877.

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Arterial Lesions in Syphilis.

The well-known work of Heubner, and the more recent labours of many of our own pathologists, have demonstrated beyond a doubt that there is a specific inflammation of the arteries of the brain in tertiary syphilis. M. Lancereaux, taking up the same subject lately at the Havre meeting of the French Association for the Advancement of Science, stated that such lesions were much more frequent than is commonly believed. The vertebral basilar, and middle cerebral arteries appear to be the most usual seats for these changes, which are characterized by circumscribed patches of arteritis, commencing within the inner coat. M. Lancereaux had seen several cases of small aneurisms formed by the breaking down of these patches, which rarely exceed more than one to two centimetres in length. The differential diagnosis from ordinary atheroma is based upon the knowledge that the subject is syphilitic; upon the fact that atheroma is developed especially in the large vessels—aortic, splenic, mesenteric, and renal arteries—whilst in syphilitic arteritis the changes are only found in the arteries of the brain; upon the frequency with which young subjects are attacked; and upon a certain symmetry in the development of the lesions. We may perhaps be permitted to add that each and every of these diagnostic marks may be found in ordinary atheroma, and it is apparently rather in the nature and mode of development and regression of the endarteritis itself that we should seek for a guidance in the matter of pathological diagnosis. Clinically also M. Lancereaux thinks the specific lesion may be distinguished from atheroma and embolism, basing his grounds chiefly on the occurrence of symptoms of thrombosis in young subjects without evidence of disease in other arteries of the body. Once recognized, he advocates prompt and energetic treatment by large doses of the iodide internally and mercurial inunctions.—*Lancet*, Oct. 13, 1877.

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Tubercular Meningitis.

Dr. Reginald Southey, physician to St. Bartholomew's Hospital, records (*British Med. Journal*, Oct. 20 and 27, 1877), four cases of tubercular meningitis in adults, and in commenting upon them says: Tubercular meningitis is apt to be misunderstood in the adult, because the symptoms have been indistinctly pronounced, or carelessly observed; but the latter is the more common error. If the entire history of the illness be truthfully elicited, it is usually too significant to admit of wrong interpretation; but towards a correct diagnosis of this, as of every other disease, careful clinical observation is requisite.

The cases narrated, and some others which I have in my possession, enable me to summarize, as follows, the more ordinary symptoms that mark the invasion of tubercular meningitis in the adult.

1. *Headache* is certainly the most invariable symptom; seldom, if ever, absent; never wanting in any case I ever watched.

2. *Vomiting, constipation,* and *fever* are present, attended by no characteristic rash.

3. Peculiarity of temper and conduct, occasional confusion of ideas, and slightly transitory delirium, are also symptomatic of this disease.

4. There are general muscular pains, followed first by stiffness, and then by slight paralysis, as shown in the imperfect co-ordination of the muscular movements, in tremblings and in twitchings. The muscular pain and stiffness are often first complained of in the nape of the neck, and then in the muscles of the back.

5. *Slight epileptiform convulsions are observed, followed by paralysis of motion in the limbs or parts convulsed;* this paralysis being most usually of a transitory or temporary kind. Among the paralyses most frequently noticed and characteristic, I may single out those affecting the optic commissure and oculo-motor tracts, causing a slight internal squint, with dilated inactive pupil of one eye, with drooping of the same eyelid, and paralysis of the facial nerve upon one side. The paralysis of the limbs, although usually a hemiplegia, is seldom one that invades the body upon one side in its entirety. Further, its mode of attack is gradual; usually the arm and leg are affected upon the same side, but the facial muscles are not involved. First there may be inertness of the arm, then of the leg, then complete loss of power; but the arm and leg may be fully extended, and never moved, although pinched and stimulated. Then the right leg may recover and the left arm be implicated, so that an apparent cross paralysis may exist; or the right arm and left leg, or right leg and left arm may be so affected consecutively. The limbs which have been paralyzed, although they may recover some power, are seldom afterwards well co-ordinated in their movements.

6. Hyperæsthesia of the skin generally appears coincidentally with peculiar mental phenomena; as, for instance, conduct obstinate and unaccommodating, and a temper quite altered from that which in health distinguished the individual, a maintained attitude of dogged resistance to whatever he or she is asked to do. Very little nourishment is voluntarily taken. The abdomen becomes retracted, and the aspect of the patient, with half-open eyelids, or some slight paralysis of these, becomes highly diagnostic.

7. *Continued drowsiness* is observed. The patient shrinks from all disturbance, and shrieks out when roused sufficiently to move or perform voluntary acts. From this drowsiness, the step to coma and death is seldom many hours distant.

The history of the case usually records an illness that has endured some two or four weeks, but one which has not attracted much attention until distracting headache with some delirium at night has supervened. Two cases I have seen were mistaken for neuralgia and hysteria, one for typhus. If, however, in these later stages, the diagnosis is usually all too certain and assured, we may well ask if, in the earlier stages, the clinical symptoms do not sometimes suffice to indicate the exact situation of the pathological lesions. Approximately, and with some likelihood, I should answer that they do; but with no positive certainty.

In those chronic, insidious, and, from their peculiar mental phenomena, most problematical cases, where there is no paralysis until the final coma, it is usual to find the tubercular meningitis principally limited to the surface of the brain; slight, too, in its amount, consisting of small opaque patches of the pia mater, attended by really very little lymph effusion; and one discovers the tubercle formations only by careful microscopic examination of the walls of the blood-vessels. If the organs of vision are involved, and there exist during life squinting or any paralysis of the muscles which move the eyes or eyelids, the base of the brain is pretty surely the seat of tubercular inflammation, and of secondary lymph or pus exudations. Again, if there exist paralysis of the limb or of one side of the face, one may expect to find matting together of the bloodvessels in the opposite Sylvian fissure, turbercles upon the bloodvessels and dropsical œdema of the choroid plexus, and softening, with capillary blood extravasations, from the size of a pin's head to that of a split pea, in the corpora striata. More especially is this rendered probable when convulsive attacks have preceded the paralysis.

More than this in diagnosis, it is true, may be achieved; thus, implication

and degeneration of special cranial nerves may occasionally be shrewdly foretold before death and discovered at the autopsy; and, similarly, implication of the spinal cord may be surmised, in some instances, from the symptoms.

The pathological sequence of events that follow the tubercular formations on the walls of tiny bloodvessels are twofold; blocking up of the blood-channels and arrest of the blood-supply, anæmia of some parts of the cerebral substance, œdema and tiny capillary extravasations of others; diapedesis of white cells, softening of tissues, exudation (as it is called) of lymph. Drowsiness is, perhaps, produced by general brain-anæmia; the peculiar mental phenomena may own a similar origin. The coma is most likely due to brain-pressure consequent upon dropsy into the ventricles of the brain.

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Remissions in the Course of General Paralysis.

In a paper read at Berlin, and reported in the second part of the *Allgemeine Zeitschrift für Psychiatrie* for this year, Dr. Böttger distinguishes three kinds of remissions as occurring in the course of general paralysis of the insane, and relates cases as examples of each. The three forms of remission are as follows: 1. Cases in which the motor symptoms disappear, but the mental weakness remains; 2. Those in which mental improvement takes place, though the paralysis (hesitation of speech, tabic gait, etc.) persists; and 3. The rarer instances in which both mental and motor symptoms disappear together, so that only the most careful examination can detect that the patient has not perfectly recovered.

Remissions must be regarded as exceptional in general paralysis; the author observed them in twenty-five out of seventy cases. In order to their occurrence, the patient must almost always be in an early stage of the disease, though some noteworthy exceptions have been recorded. Remissions are most common during the first stage, when symptoms of motor paralysis have not generally appeared, and the improvement usually commences within the first few months of the patient's stay in an asylum: this is believed to be due to the beneficial effect of the quiet and regularity of asylum life on the congestive condition which characterizes the prodromal stage of paralytic dementia.

In all cases of improvement or apparent recovery from the disease, close examination reveals a remaining weakness of intellect; this is seen in the shallowness and instability of mental impressions, frequent changes between cheerfulness and depression without adequate cause, marked alteration in the patient's original character. Sometimes the patient shows a disposition to unmitigated, and perhaps purposeless, lying. In this stage of the disease, too, the patient is very easily worked upon by outward influences, whether good or bad—an important circumstance from a medico-legal point of view. Another characteristic of the stage of remission is the patient's want of appreciation of his condition; he never shows the satisfaction which is seen in the convalescent from physical disease, nor gratitude and attachment to those who have had the care of him; a shyness and disinclination to speak of the past always remain. Simon has already noted as a characteristic of this stage the tendency of the patient to withdraw himself from all medical examination, whether mental or physical.

As a rule, after a remission, the renewed progress of the disease is ushered in by an epileptiform or apoplectiform seizure, which is not unfrequently rapidly followed by death, though more often the well-known clinical symptoms of the disease are fully developed, and the patient passes through its various stages. —*London Med. Record*, Oct. 15, 1877.

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Two Cases of Cerebro-spinal Sclerosis in Children.

At a late meeting of the Manchester Medical Society (*Med. Examiner*, Oct. 18, 1877) Dr. Julius Dreschfeld showed two children, brothers, æt. 7 years and 8 years and 5 months respectively, affected with sclerosis in patches, or insular sclerosis.

Both cases were well-marked examples of the disease; the elder of the two brothers showing, however, the disease in a more advanced form. The following is a very brief account of their history and present condition:—

Thomas F., the elder, æt. 8 years 5 months, was well up to the end of his first year; when 14 months old had two convulsions, which were soon followed by trembling of the eyeballs, and trembling and weakness of the limbs. The disease from this rather sudden onset had gradually progressed up to the present day. He is fairly developed, well nourished, but unable to stand or walk; when he attempts any movements his whole body trembles. His face has a vacant stare; his intelligence is blunt; nystagmus is constantly present; his speech is very much affected; it is slow and "scanny," and certain letters he is quite unable to pronounce. There is marked glosso-labio-pharyngeal paralysis; the mobility of his tongue is impaired, saliva continually trickles from his mouth, and there is difficulty in swallowing fluids. When any movement is attempted the head trembles violently; when at rest there is no trembling. The upper extremities are paretic, not wasted; no contraction, no loss of sensibility. The lower extremities are quite paralyzed; he is unable to walk or stand; the feet show commencing contractions; there is no atrophy or loss of sensibility in the lower extremities; the electro-muscular irritability and electro-muscular contractility are not affected; bladder and rectum not paralyzed; the digestive functions are normally performed, and the organs of the chest and abdomen seem perfectly healthy.

James F., æt. 7, seemed perfectly well up to his fourth year, when he began to show a tendency to falling forward on walking; the walk at the same time became unsteady and was accompanied by trembling. He gradually grew worse, and presents now the symptoms of the disease in a well-marked form, though less advanced than his elder brother. He is well nourished and fairly well developed; he is able to stand, but walks with great difficulty, his walk resembling that of an ataxic person, with this difference, that in walking he puts his toes (and not the heels) first on the ground, owing to commencing contractions in his feet; when walking he reels from side to side, and the whole body trembles; he is unable to walk with his eyes shut; when he stands or sits quietly there is no trembling; his legs are not atrophied, and there is no diminution of sensibility to be observed. His upper extremities are paretic and ataxic, and any movement is accompanied by trembling; they do not show either atrophy or loss of sensibility. His face shows a vacant stare; his intelligence is good, but there are emotional disturbances (immoderate laughing and crying); nystagmus is only marked when his attention is fixed on some object; there is beginning glosso-labio-pharyngeal paralysis, and the speech is very much affected. The thoracic and abdominal organs seem healthy; bladder and rectum not affected.

Dr. Dreschfeld drew attention to the rarity of this affection in children, and to the peculiar family disposition in this case, the two little patients being brothers; the other children of the same family (one child æt. 4, and the other æt. 1 year and 7 months) so far show no symptom of the disease. Similar cases seem to have been observed by Friedreich (*Virchow's Archiv*, vol. lxviii. p. 146), who, however, described them as cases of locomotor ataxy with nystagmus. Medicinal treatment does not seem to be of much avail in these cases; the frequent use of cold shower baths seems to be of some service in arresting the progress of the disease.

Plexiform Neuroma.

Dr. CARTAZ narrates (*Archives Gén. de Méd.*, Aug. 1876) a case of this unusual form of neuroma, and takes the opportunity to record its history and pathology. The whole number of cases on record amount only to thirteen. It is especially a disease of childhood and early youth; it may be congenital; and its most frequent site is upon some part of the head. It is indolent in its course, and does not attract attention by pain or other circumstance, until it has attained the characters of a definite tumour, covered by a thickened, dense, rugose, or furrowed skin, of a brownish-red colour, and not unfrequently adhe-

rent with it by continuity of disease. The sebaceous glands of the skin also become greatly enlarged.

When the neuroma occupies a mucous surface, like hypertrophic changes take place in the submucous tissue, which grows hard and produces a prominent mass.

The growth of these tumours is unaccompanied by inflammatory action, and as pain is absent they may be freely handled. The only exception to this rule occurred in the case recorded by M. Verneuil, where the neuroma appeared later in life on the prepuce, and was the cause of great pain, especially when touched. The rule, indeed is, that the surface of the tumour is of blunted sensibility, so that a needle may be thrust into it without signs of pain. This circumstance is explicable by the pathological character of the growth, which presents either degenerated nerve-fibres, or otherwise a great production of connective tissue around the nerve-fibres, where these still remain normal.

Further, adenitis is a common concurrent condition, though not a consequence, and associated with indications of scrofula. The neuroma is not marked by increased vascularity, excepting that the small subcutaneous, and the deep veins are dilated. However, in a case recorded by Winiwarter, the cellular proliferation had seized upon the capillary vessels generally, causing obstruction and minute thromboses.

When examined minutely the tumour is seen to be made up of a network of contorted nerve-fibres, considerably hypertrophied, and bound together by an excessive growth of connective tissue. It has been noticed in some instances that the nerve-fibres, though themselves greatly thickened by hyperplasia of connective tissue, are not bound down by the surrounding mass, but may be drawn out, as if from sheaths, for a greater or less distance. Further, in some cases the overlying integument is involved and adds much to the dimensions of the tumour. Owing to this skin complication some have proposed to distinguish two forms, one cutaneous, the other subcutaneous; but there are not sufficient grounds for the distinction.

The nerve fibres are curiously twisted on themselves, after the fashion of varicose veins, and by means of the excessive growth of connective tissue around and between them, they are pressed upon and become at places obliterated, the myeline undergoing granular degeneration. A microscopic section shows a transparent fibrous mass, permeated here and there by dark lines, indicating the remnants of nervous substance. It is the persistence of these lines of myeline that distinguishes this form of neuroma microscopically from the ordinary one; for in this latter there is a hypergenesis of all the constituent parts of the nerves with ulterior atrophy of all nerve elements.

In making a diagnosis, these tumours have to be distinguished from cirsoid aneurisms. This is easy, by reason of the absence of vascularity, of bruit, of expansive movements, and of pulsation. Their difference from old varices, grown thick, and with thromboses on parts, is less pronounced; but these lesions are commonly found in the lower limbs, are of wide extent, and occur among those advanced in age. Moreover, the history of a past stage, when the vessels were pervious and soft, will determine the diagnosis. Again, lipoma and circumscribed elephantiasis exhibit in some points a resemblance. But though a lipoma may be of slow growth, and its lobulation simulate vaguely the varicose cord feeling of neuroma, the latter does not form so definite a tumour, is less isolated, and has the skin often adherent, and hypertrophied and discoloured. Lastly plexiform neuroma differs from a localized elephantiasis, by the contorted cord-like feeling of its tissue, and by the early age at which it is found, probably dating from the period of birth.

As to treatment, it has to be remembered that though the evolution of these tumours is slow, it is progressive, and that they likewise may undergo sarcomatous degeneration; consequently the early removal of the diseased mass suggests itself as the proper course.—*British and Foreign Med.-Chir. Rev.*, Oct. 1877.

Acute Progressive Neuritis.

Dr. H. EICHHORST, of Jena, contributes to Virchow's *Archiv* (Feb. 1877) a highly interesting case of this. The symptoms seemed to point to an inflammation of the stems of the peripheral nerves, involving one stem after another. The post-mortem appearances agree with this, there being no discoverable affection of the brain or cord, but great hyperæmia of the nerve stems, with small hemorrhages and accumulation of leucocytes. The nerve fibres appeared to be little involved, but those next the perineurium or the hemorrhages showed ordinary fatty changes. The patient was an old woman, admitted with febrile symptoms like those of ague. These seemed to yield to quinine, but almost simultaneously with the reduction of the temperature a paralysis of the left peroneus longus muscle occurred. There was a feeling of formication and cold in the affected parts, with sweating. Sensation was diminished from the first, and was lost in a few hours. The paralyzed muscles at first replied to electric stimulation, but next day this, too, was lost. About a week after a similar affection of the peroneous brevis of the same side occurred, and it was also preceded, for a day, by elevation of temperature. In three days more the left tibialis posticus was involved, and in the course of the next ten days the whole of the nerves of the four extremities were progressively attacked, till at the end of that period the whole of the limbs were motionless. Death occurred in a few days, and was preceded by blindness, which supervened forty-eight hours before the fatal issue. Death seemed directly due to interference with respiration. The disease, in some respects, resembles that described by some French authors, as acute ascending paralysis, which is said to be due to an affection of the ganglion cells of the anterior cornua of the cord. It differed from this disease, however, in respect that sensation is not affected in the latter, whereas here it was soon abolished. The electric excitability of the extremities is retained in acute ascending paralysis, while here it was lost after a day. The results of the post-mortem examination were also against this diagnosis. The author asserts that the ganglion cells of the anterior cornua were in no way different from the normal. The disease was a generalized neuritis affecting the extremities.—*Glasgow Med. Journal*, Oct. 1877.

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Disorder of Nutrition following Injury of the Left Median Nerve.

A recent number of the *Berliner Klinische Wochenschrift* contains an account of a case in which an injury of the median nerve was followed by certain peculiar symptoms, indicative of disturbance of nutrition. The patient, an inmate of a lunatic asylum, had received a somewhat deep wound at the lower part of the left forearm, just above the wrist. Ten days after the injury, and while the wound was in process of healing, a vesicular eruption appeared upon the skin of the left hand, and, after running a somewhat tedious course, left cicatrices behind it. These latter were conspicuous after the wound had completely healed; they were six in number, and were situated on the middle and index fingers, and on the ball and basil phalanx of the thumb. The vesicles appeared in succession, the eruption proceeding in a downward direction. Their size was that of a pea or bean; they contained a clear fluid, which gradually became opaque, and finally a dry crust was formed and became detached. While this was going on, and after cicatrization had taken place, the patient complained of weakness, stiffness, and immobility of the fingers, and of a sensation of pins and needles. Some little time afterwards there was manifest decrease of sensibility; slight impressions were either not felt at all, or only very indefinitely, this loss of sensation being particularly marked on the volar surface of the three first fingers, and on the cicatrices. The skin of the points of the fingers was dull, and somewhat paler and smoother than natural. When the hands perspired, the radial half of the left hand was found to be dry. The patient appeared to be compelled to use great efforts when he wished to close his hand. Taking all the symptoms into consideration, the affection appeared to be due to a descending neuritis of the injured nerve.—*Medical Examiner*, Oct. 11, 1877.

Treatment of Œdematous Laryngitis.

TÆTER and KRISHABER recommend the following treatment in œdematous laryngitis: If it is markedly inflammatory antiphlogistic treatment should be practised; one or two general bleedings, and wet cupping in the neck, will give considerable relief, diminishing the inflammation, and lessening the engorgement of the tissues. By means of a spray apparatus, water impregnated with tannin or alum may be applied to the back of the throat. In the absence of a spray producer, a simple irrigator filled with astringent liquid may be used. Recourse may also be had to cauterization with nitrate of silver, insufflations of tannin or alum, and scarifications and division of the ary-epiglottic folds. These two last methods are somewhat difficult to practise; but often under the influence of spray, irrigation, and local bleedings the inflammation diminishes and disappears. When the œdema of the glottis is due to tuberculosis or cancer, art is powerless against the diathesis and the laryngitis. Nevertheless we may have recourse to cutaneous revulsion, emetics, and purgatives, unless the progress of the disease be too rapid and the patient too much reduced. In the œdema of the glottis caused by necrosis, the last resource in tracheotomy, which is often only a palliative; but it is important that it should be performed before the patient is too weak, or asphyxia has commenced.—*Med. Examiner*, Nov. 1, 1877.

Use of the Cold Douche, and Friction with Towels wrung out of Cold Water, in Cases of Chronic Phthisis.

Dr. A. VON SOKOLOWSKI is Dr. Brehmer's assistant at the Görbersdorf (Silesian) Sanatorium, where a very great number of phthisical patients are treated every year. He remarks (*Berliner Klinische Wochenschrift*, Nos. 39, etc., 1876) that a variety of opinions prevail amongst medical men as to the propriety and usefulness of the cold douche in pulmonary phthisis. Some consider it of the highest utility; others regard it as quite unfit not only for consumptive cases, but for all analogous ones. It occurred to him, therefore, that it would be useful to carefully note the effect of this treatment in the cases under his observation at Görbersdorf. The results are as follows. A hundred and five cases of consumption were treated by the cold douche. These may be subdivided into three categories. 1. Patients with deposits of very limited extent (infiltration) in one or both apices of the lung, and patients only suffering from catarrh of the apices, with marked hereditary taint. These deposits were partly recent, partly of old date; sixty-six patients belonged to this category. 2. Patients with extensive infiltration, without any demonstrable breaking down (destruction) of tissues, and whose general condition was good; nineteen patients belonged to this class. 3. There were thirty-three patients who had physical signs of breaking down, or softening of the deposits (destruction of lung-tissue), yet with the general health little impaired. This class includes both limited and extensive deposits. Of the whole number, sixty-six had no hereditary history of phthisis, whilst in thirty-nine cases the history of phthisis in the family was perfectly clear and indubitable. The hydrotherapic treatment was supplemented by attention to diet, and an air-cure. The duration of the hydrotherapic treatment was, on an average about three months.

The final results of the treatment were as follows. Of the hundred and five patients (1) thirty-nine left the institution with so much improvement that they might be considered as perfectly, or at least for all practical purposes, cured: (2) thirty-four left it with very considerable improvement; (3) nineteen with some improvement; (4) seven left it with no improvement; (5) two of them were worse rather than better; and (6) four of them died. We thus see that thirty-nine of the hundred and five cases, or 37 per cent., terminated in recovery. Those which recovered perfectly were for the most part cases of limited deposits in the lung. In such cases, after the treatment, there was considerable improvement of the general condition, gain of weight and strength, with increased appetite, and perfect absence of all pathological symptoms as regards

the organs of respiration, though one or two may have shown slight variations from normal percussion-tones, and prolonged expiration at the apex of a lung; but this slight dulness at the apex is sometimes consistent with recovery, as it may be due to thickening of the pleura. It is not pretended that there is absolute freedom from relapses under other conditions of climate and modes of life. Years are required to settle this point affirmatively. In the second class, or those relatively cured, must be placed those cases in which there had been considerable destruction of lung-tissue, with subsequent contraction, etc. Their general health was improved; all hectic symptoms, where such were present, had disappeared; but the damaged lung remained as a sort of *caput mortuum* to the injury of the organism. Such cases must of necessity be very liable to relapse. If the 37 per cent. seem a large proportion of success, it is to be remembered that the cases subjected to this douche treatment were selected from those suffering from the most favourable forms of the disease. Only 25 to 30 per cent. of the Görbersdorf patients were subjected to the douche. Only eleven of the cured cases had hereditary phthisis. Of the four fatal cases, one died of typhlitis and general peritonitis, of a purulent kind; one, after hæmoptysis, died of tubercular meningitis: a third, after hæmoptysis, died of acute and rapid phthisis; as did the fourth and remaining case.

As regards the immediate effects of the douches, and those of the combined or repeated douches, they are as follows. 1. The capillary vessels of the skin become accustomed to a sudden contraction (shown by pallor, cold feeling, and emptiness) and then become dilated for a longer time (shown by purple red colour, and a pleasant feeling of warmth). 2. There is an increase of cutaneous respiration. 3. There is increased tissue metamorphosis, and improvement of the general condition of the patients. The skin is too often neglected in consumptive patients, and at first the douche often proves very unpleasant. The reaction is promoted by vigorous rubbing with towels, and very soon the skin begins to resume its functions, and the douche is no longer unpleasant.

Sokolowski considers the douche indicated—I. In those predisposed to phthisis, but not actually consumptive, as (1) children of phthisical parents, whilst growing up; (2) people who have very sensitive skin and mucous membranes, and are always taking cold; (3) in so-called "primary catarrh of the apices;" (4) in chronic bronchial catarrh, not definitely localized with history of consumption in the family; (5) in chlorosis of constitutional or hereditary type. II. In people already suffering from phthisis: (1) in all the acquired inflammatory kinds, if the general condition of the system be good; as (*a*) in limited deposits in one or both apices of lungs; (*b*) in more extensive lung-changes, *i. e.*, when the size of the deposit is larger, even with considerable breaking down of tissues in consequence of chronic, stationary phthisis, without pyrexia [in a note he says that slight evening exacerbations of temperature do not forbid the use of the douche; and he refers to a paper of his in the *Deutsche Zeitschrift für Praktische Medicin*, No. 46, 1875]; (2) in constitutional inherited phthisis when the lung symptoms are still limited and slight, and the general health is good. But improvement should already have set in under the use of appropriate diet, and fresh air. In summer the douche may be used freely. In winter we must be far more cautious. Pharyngo-laryngeal catarrh is a decided contra-indication against the use of the douche in winter. Not only the time of year, but the weather of each day must be taken into account. The chief contra-indications are: 1. Great general debility, apart from lung symptoms; very anæmic people mostly belong to this class; 2. Well-defined hectic symptoms, even when not very severe; 3. When no improvement results from the use of the douche, or there is faulty reaction, a great feeling of weariness, long-continued chilliness, faintness, etc., produced by its use. As temporary reasons forbidding its use are: 1. The menstrual period; 2. Severe nasal catarrh, especially in winter; 3. Hæmoptysis; 4. Well-marked muscular rheumatism, and other complications or incidental maladies. Whether a tendency to hæmoptysis forbids the douche is much disputed. Sokolowski thinks the objection theoretical. The experience of these hundred and five cases is against it; 70 per cent. of them had more or less hæmoptysis; 27 per cent. rather considerable losses of blood. In the eight months of douches there

were only nine slight, and four severe attacks of hemorrhage—only once immediately after the douche—thus, in only fourteen of the seventy-four was there any bleeding from the lungs during the treatment. Indeed, slight hæmoptysis was several times checked by the douches—once in his own person, for Dr. Sokolowski was himself a patient at Görbersdorf in 1873 and 1874, and made use of the douche. He remarks that both the profession and the public attach an undue importance to slight bleeding from the lungs. He has known a patient to lose ten pounds in weight in two or three days after a trifling loss of blood. Others became melancholic or mad. Others again fainted at the sight of a drop or so of blood. Only special forms are dangerous, such as the aneurismal, etc. The moral treatment is of vast importance in all cases. The cold douche will actually check some cases. Many hemorrhages from the lungs occur in the early morning with subnormal temperatures, and slow, small pulse. This *pulsus rarus et parvus* (sixty in his own case) is often the precursor of bleeding; doubtless due to congestion of lungs and weakness of heart. He has known a glass of wine and a walk check some hemorrhages. As to the kind of douche, he agrees with Braun, in his *Balneotherapie*, (Berlin, 3te Auflage, 1873, p. 249), that few things require more skilful control than the douche, and few are so dangerous as this in the hands of an enthusiast. The natural temperature of the water from the hills, used at Görbersdorf, is from +4° to +10° Réaumur (41° to 54° Fahrenheit), and this is used without modifying it for special cases. There is high natural pressure, owing to the height of the sources. Two kinds of douche are used, (*a*) the rose, or rain-douche, which spreads over the whole body, by falling like a shower from above; and (*b*) the jet-douche, which is either perpendicular or lateral. There is a special chamber. The medical attendant, on hearing the patient's name, turns on the appropriate tap. It is generally applied between 8 and 10 A.M., and at first only from four or five seconds. After the douche, the patient is rubbed vigorously, and then, if the weather permit, walks out, and climbs the hills; or, in bad weather, takes exercise in a long saloon for the purpose. Hardly any douche exceeds thirty seconds. The first, and sometimes other douches are followed in some cases by dyspnœa, or by violent palpitation. These symptoms sometimes depend on the time being too protracted. If they persist, along with weariness, and general weakness, it is better to leave off the douches. Headache may be sometimes avoided by protecting the head. Stabbing pains, with violent cough and expectoration, are met with in a few cases. Brisk rubbing with a towel dipped in rather cold water (50° to 59° F.) may be substituted for the douche with great advantage, particularly in the winter. Rubbing with a dry towel succeeds this. The whole affair must not exceed five minutes. Hectic is considered to contra-indicate both these and the douche. The same remarks generally applies to night-sweats.—*Lond. Med. Record*, Oct. 15, 1877.

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Subcutaneous Injection of Carbolic Acid for Phthisis and Tuberculosis.

SCHNITZLER states (*Centralblatt für die Chirurgie*, No. 20, 1877) that he has made experiments with the subcutaneous injection of carbolic acid, in upwards of one hundred cases of phthisis and tuberculosis. The strength of the solution was from one to two per cent. The results were diminution of the febrile symptoms, more tranquil breathing, lessening of the feeling of weight and uneasiness, and when the remedy had been employed for some time, diminution of the night sweating. The amount injected was one or two Pravaz-syringefuls every or every other day.—*Practitioner*, Oct. 1877.

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Opium and Bromide of Potassium in Heart Disease.

Some time ago some one called digitalis the quinine of the heart. But digitalis is a precious remedy which is sometimes abused. It has well-marked contra-indications. In heart diseases characterized by aortic insufficiency and obstruction, digitalis is not indicated; a series of experiments made by M. GUBLER shows the power which opiates have in these cases. It is above all

in mitral affections that opium is contra-indicated; it is useful, on the contrary, in affections of the aortic orifice.

Dr. Henry Huchard has sought to explain the therapeutic action of opium by attributing to it a *hyperæmiant* action on the brain. Without committing ourselves to this explanation, we shall content ourselves with making known the mode of administration.

Preference should be given to preparations of morphia, and especially to the subcutaneous injection of morphia; experience on this point having amply demonstrated, on the one hand, that large doses of this remedy only are successful, on the other hand, that the morphia injected into the cellular tissue is endowed with an action not only more rapid, but slightly differing from that which it possesses when introduced by the stomach.

At other times M. Gubler prescribed the tincture of thebaia in five-drop doses, three times a day.

In the *Revue Clinique de Bologne*, Dr. Giuseppe Angrisami has come to the following conclusions with regard to the administration of bromide of potassium: the bromide has no action on the muscular fibres of the heart as digitalis has, and the latter has no action on the arteries; the bromide is a remedy most fitting for correcting functional disturbances of the heart, as frequency, intermitting, arhythm. etc. Whatever be the state of the myocardium, it modifies advantageously and quickly angina pectoris and palpitations, when they are simple neuroses. In cases depending on profound anatomico-pathological lesions of the heart and its vessels, or on compression, the bromide succeeds in producing a more or less lasting improvement. From these facts we may conclude in favour of *opium* when there is aortic lesion; *bromide of potassium* when there is neurosis; *digitalis* in other cases.—*Med. Examiner*, Sept. 13, 1877, from *Paris Médical*, Aug. 2, 1877.

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Congenital Occlusion of the Small Intestine.

E. Theremin (*Deutsche Zeitschrift für Chirurgie*, vol. viii.) remarks that congenital occlusion of the small intestine is extremely rare. In the Vienna Foundling Hospital, it was met with only twice during eleven years, in 111,451 children; and in St. Petersburg nine times in 150,000 cases. Theremin divides it into 1. Narrowing and atresia of the duodenum; 2. Atresia of the jejunum and ileum; 3. Atresia of the horizontal branch of the duodenum; 4. Fœtal incarceration of the small intestine; 5. Occlusion by tumour. Stenosis and atresia of the curvature of the duodenum are merely different degrees of the same affection. The intestinal tract is normal, and so are the peritoneal ligaments; but the greater omentum is very short. The stomach is dilated and thickened, and studded with capillary extravasations in consequence of frequent vomiting. Round ulcers are found in the dilated portion of the duodenum above the constriction, while the lower horizontal portion of the duodenum commences below the atresia as a blind sac, and, with the rest of the intestine, is much contracted. In cases of stenosis, a very fine canal lined with mucous membrane alone connects the upper and lower portions, and the ductus choledochus is connected with the constricted part. In all the subjects of this malformation, vomiting takes place immediately on their sucking, and they rapidly die. The rejected ingesta are coloured black with blood. The discharge of meconium has been nearly normal in all the cases; and there have been no signs of peritonitis. In the other portions of the small intestine, the occlusion is found in the upper or lower part of the jejunum, or in the lower part of the ileum, near the ileo-cæcal valve. Sometimes the obstruction is caused by a membranous septum arranged perpendicularly to the wall of the intestine: in other cases the intestine forms a *cul-de-sac* above and below the stricture. There are also specimens in which, besides atresia in one or more places, the intestines have become adherent to each other or to the abdominal wall by false membranes. The children generally die soon after birth; one lived twenty-six days. In the related cases, vomiting occurred only when the atresia was situated in the upper part of the jejunum; in many, there were dilatation and ulceration of the portions above the constriction, with signs of

recent peritonitis. The author has observed only two cases of atresia of the horizontal branch of the duodenum. The constriction was situated at the commencement of the extra-peritoneal horizontal portion, below the opening of the bile-ducts. The colon was full of meconium. The intestinal tract was normally arranged; the mesentery was short and thick. Under the head of fœtal incarceration are described three cases, in which the intestines, the arrangement of which was normal, were occluded by pseudo-membranous cords. In other cases (two from other sources, and three observed by the author), the obstruction was caused by twists of the intestine. The mesentery was inordinately long. Of congenital occlusion by tumour, there is only one case, recorded by Widerhofer, in which an alveolar cancer of the left lobe of the liver was also intimately adherent to a loop of the ileum, which was twisted once on its axis. The author refers the cases of occlusion in the first four categories exclusively to peritonitis during the first half of fœtal life; traces of which may be afterwards occasionally found in the form of enlarged mesenteric glands, abnormally developed peritoneal ligaments, or a shortened and atrophied mesentery.—*British Med. Journal*, Oct. 27, 1877.

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The Treatment of Lichen.

In a recent clinical lecture at the Saint Louis Hospital, M. Laillier laid down the following rules for the treatment of lichen: In the first place, in order to proceed methodically, the cause must be studied. There is a lichen the causes of which are external, or an artificial lichen. The lichen, the causes of which are internal, is the most interesting to study, and it may be syphilitic, scrofulous, arthritic, or herpetic. *A.* Syphilitic lichen appears in three forms. 1. A popular, lenticular syphilide, consisting of coppery papules, covered with scales and surrounded by a zone. 2. A papular, miliary, diffuse syphilide; this is especially met with in scrofulous syphilitic patients. 3. Circumscribed syphilitic lichen; this appears in the form of groups of lenticular papules; but sometimes these groups are surrounded by a zone of miliary lichen, whence the name, "corymbose syphilide." These three forms are cured by resolution. *B.* The scrofulous form is the most common. *C.* Arthritic lichen comprehends circumscribed lichen and livid lichen. *D.* In herpetic lichen there is diffusion of the eruption. The treatment is general or local. The general treatment is that of the diathesis. The local treatment is very complicated. In syphilitic lichen, M. Laillier prescribes an ointment of iodide of potassium, or of biniodide of mercury, of 1 part in 50 or 100. In lichen agrius M. Laillier advises enveloping with caoutchouc as in eczema; with this he prescribes douches, vapour-baths, and inunction with glycerole of starch, which succeeds better than in eczema. When the lichen is situated about the anus or perinæum, M. Laillier employs an ointment of oxide of zinc. To alleviate the intolerable itching of this form, the author advises lotions of warm water, or at any rate, warm baths every day to the affected part. He does not recommend oil of cade in these affections. With respect to hydromineral treatment, the patient should be sent to those waters indicated by the diathesis.—*Medical Examiner*, October 25, 1877.

Surgery.

Metastasis of Tumours.

Professors Cohnheim and Maas, of Breslau (*Virchow's Archiv*, June, 1877), have endeavoured to elucidate the difficult question of the metastasis of new formations. Assuming the possibility that detached fragments of such new growths may find their way into the blood- or lymph-vessels, and cause capillary

embolisms in some distant part, as has been often suggested, they tested experimentally the truth of the hypothesis so far as to ascertain whether an embolon composed of specific histological elements can grow within the walls of the bloodvessels, and reproduce a growth retaining the peculiar characters of the parent mass. They experimented on rabbits, dogs, and hens, but were most successful with the latter. Their experiments consisted in detaching a small piece of periosteum from the tibia, and introducing it into the jugular vein. At first they found considerable difficulty from the ordinary mechanical and surgical results of such an operation, but, by using Esmarch's method, combined with all antiseptic precautions, they succeeded, and the animals lived quite well. They were killed, after various periods, by bleeding. In those killed from the third to the fifth day, only embolized periosteum was found; in those from the tenth to the sixteenth day, a resistant hard place on the lung, parenchyma existed; in those after the twentieth day, the results were quite negative. Microscopically examined, the masses found between the tenth and sixteenth days were truly growths of the periosteum, with commencing formation of bone; but in cases where more time had elapsed, the new growth was seen to be undergoing absorption, and after a month had entirely disappeared. They consider this disappearance to be due to that physiological capacity of the organism which shows itself in the removal of callus, and they suggest that the real factor in the generalizing of new formations is the abolition of this function. So long as the constitutional condition of the individual maintains this ability, tumours remain merely local affections, although fragments are being constantly detached and carried about by the circulation to distant parts of the body. According to this view, the inoculation of healthy animals with cancerous matter would remain without effect, as we know to be the case. The explanation is hypothetical, but it is at least as comprehensible as the "malignity" of certain growths.—*London Med. Record*, Oct. 15, 1877.

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Gunshot-wound of the Head in a Child.

R. Demme, (*Centralblatt für die Med. Wissenschaften*, Aug. 11th) in the report for 1876 of the Children's Hospital in Bern, relates the case of a boy aged 5½, who was wounded by a small revolver bullet, the ball entering at the lower and inner angle of the right frontal bone, close over the root of the nose, and passing somewhat upwards without leaving the skull. The boy was at first stunned, but in a few minutes recovered consciousness. There was paralysis of the left side of the face and of the right half of the body. A probe could be passed into the wound to the depth of 5 or 6 *centimetres* (about 2 or 2⅓ inches). Healing took place in five or six weeks; and power of movement began to return in the paralyzed limbs—the paralysis being only of motion—about the fourth or fifth week. When Dr. Demme saw the child four or five months after the accident, there was a cicatrix at the place of entrance of the ball, at the bottom of which a deposit of bone could be felt; there were traces of paralysis of the left side of the face; the right upper limb was flexed, with paralysis especially of the deltoid and triceps muscles; the extensors of the right lower limb were weaker than those of the left. The patient could move about with the help of a supporting apparatus. Subcutaneous injections of strychnia greatly improved his condition. The author believes that the ball entered the left hemisphere of the cerebrum, and became encapsuled in it or in the base of the skull.—*British Med. Journal*, Oct. 27, 1877.

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On Tuberculosis of the Eye.

Dr. Walb, of Bonn, gives, in the *Klinische Monatsblätter für Augenheilkunde* for August, a communication on the above subject. After relating a case which has been under his care since his former paper on the subject in August, 1875, he gives a slight *résumé* of the observations of other continental surgeons on the same affection, and sums up shortly as follows.

1. Every portion of the eye which contains vascular connective tissue is in a position to become tuberculous.

2. The eye may be the primary seat of the affection, no tuberculous degeneration being present in other organs, or it may be affected simultaneously with other organs.

3. The eye may be the seat of a secondary tuberculosis in the form of miliary tubercle.

4. This develops either as part of a widely spread miliary tuberculosis, and then it seems to occur only at the choroid; or it arises when, in another part of the eye, simultaneous primary tuberculosis is present. For example, secondary disseminated miliary tubercle may be seen in the ciliary body when a primary tubercular deposit is present on the iris.

5. Primary tuberculosis of the eye can induce secondary affections of the other organs.—*London Med. Record*, Oct. 15, 1877.

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On the Refraction of the Eye.

SCHMIDT-REMPLER, in the *Berliner Klinische Wochenschrift*, 1877, Nos. 4 and 5, gives a new method of determining the refraction of the eye by the ophthalmoscope. He uses the inverted image, and determines its place by having a small object in front of the lamp; a series of bars on a star. When the shadow of this image and the fundus of the eye are seen distinctly at the same time, it is evident that they both lie at the same distance from the eye of the observer. As the distance of the shadow from the mirror of the ophthalmoscope is known, the refraction of the patient's eye is easily calculated by the following formula, $\frac{1}{F} = \frac{1}{B} + \frac{1}{A}$ where F is the focus of the lens employed in producing the inverted image; B is the distance of this lens from the place of the image of the shadow; and A the distance of the real myopia, or the virtual hypermetropia. Neither the accommodation nor the refraction of the observer affect this method, which is entirely independent of the condition of his eye. The image of the flame of the lamp may be used instead of the shadow, except when great accuracy is required.—*London Med. Record*, Oct. 15, 1877.

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On Neuritis Migrans after Enucleation.

In a paper in the *Berliner Klinische Wochenschrift* for March 19, Dr. COLSMAN thus designates the occurrence of secondary optic neuritis in the sound eye after the removal of the other eye. He records three cases, of which one only came under his personal observation.

The case treated by the author was a man of 35 years of age. When he first presented himself, he had a central perforation of the lens-capsule and cornea from the entrance of a foreign body; kerato-iritis supervened, with great pain and swelling of the tissues of the orbit. The patient, however, would not consent to enucleation until six weeks after the accident. A few days after the operation, the sound eye presented a patch of œdema of the conjunctiva occupying about a fourth part of the surface of the bulb; at the same time, the power of vision had fallen to $\frac{15}{100}$, although there was absolutely nothing abnormal in the ophthalmoscopic appearance of the fundus. Three days after this, there was distinct haziness of the optic disk and of the surrounding retina, extending towards and involving the yellow spot. The field was very much contracted concentrically, especially from without and above. The author asks if this form of the field does not point to a pressure on the optic nerve, chiefly acting from without and from below; and, therefore, to infiltration of the space between the outer and inner sheath of the optic nerve. Acting on this theory, the treatment consisted of mercurial inunction, a seton in the neck, local bloodletting, and iodide of potassium internally. In ten weeks the field of vision was normal, and the patient saw $\frac{15}{10}$, and, at the end of six months, he had completely recovered.

The other two cases are given with less detail, but are very similar in every respect, except that one of them was lost sight of at an early stage of the neuritis.

The author believes that, in these cases, the inflammatory process is propagated through the connective tissue of the space between the outer and inner sheaths of the optic nerve to the chiasma, and so to the sound eye. In support of this view, he quotes a number of facts, especially referring to the pathological processes which are known to occur in the lymph space of the optic nerve. Thus, Michel describes a new formation in the sheath of the optic nerve of a boy who had been blind from atrophy for some years before his death; Leber, one in which the tissue of the lymph space was hypertrophied; Manz, one of dropsy of the sheath; and Krohn, a case of double neuritis, in which the sheaths of both optic nerves were infiltrated with carcinomatous deposit secondary on ovarian cancer.

Lastly, he refers to Klemm's investigations, which show that inflammation of a nerve-trunk of one side may extend to the corresponding nerve-trunk of the opposite side of the body, either with or without implication of the corresponding segment of the cord and its membranes. Dr. Coleman quotes a case of double sciatica, without any spinal symptoms, as a case in point.—*London Med. Record*, Oct. 15, 1877.

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Lithotomy in a Girl Nine Years of Age.

In a paper read before the Société de Chirurgie (*Annales de Gynécologie*, May, 1877), M. Lemée records a case in which he performed lithotomy by the urethral method on a girl nine years old. In August, 1872, the patient began to suffer from pain in the hypogastrium, and frequent and painful micturition. Walking became increasingly painful, and, in September, incontinence of urine supervened. M. Lemée was called in on November 8th, the child being then unable to leave her bed. He then discovered a vesical calculus which appeared to be of very large size. On October 12th lithotomy was performed by the urethral method, without the occurrence of any untoward accident. The incision was extended to the pubes, but the extraction was effected with difficulty, on account of the size of the calculus. The stone weighed 15 grammes and measured 45 mm. in its greatest diameter, and 26 in its smallest. It was ovoid in shape, and friable, and in its centre was discovered a rusty needle. According to the child's confession, this had been in the bladder for two years. On the 25th of October, thirteen days after the operation, the patient left her bed, and had no incontinence of urine, except at night; soon after, incontinence had completely ceased.

The committee which presented the report of the paper (consisting of MM. Tillaux, Polaillon, and Périer) expressed its approval of M. Lemée's choice of operation in this case, and contended against the conclusions arrived at by Mr. Walsham in the St. Bartholomew's Hospital Reports for 1875, that vaginal lithotomy is always preferable, as involving a less risk of subsequent incontinence, and that incontinence of a more curable kind. In the discussion which followed, several speakers expressed their preference for lithotrity, when the calculus is not too large. MM. Tillaux, Duplay, and Le Fort, however, considered lithotrity a less favourable operation in the female than in the male sex, because of the short and straight course of the urethra, which did not allow sufficient urine or injected water to be retained in the bladder during the operation. M. Anger related two cases, and M. Paulet one, in which urethral lithotomy had been successfully performed in women, and in which the resulting incontinence had rapidly got well. M. Verneuil considered the risk of permanent incontinence to be much greater with urethral lithotomy, and recommended, in children, lithotrity if the calculus were friable: supra-pubic lithotomy, if it were of large size; in adults vaginal lithotomy, if lithotrity were not practicable, considering that the cure of vesico-vaginal fistula is easy with our present resources.—*Obstetrical Journal of Great Britain*, Oct. 1877.

Treatment of Phagædenic Chancre.

All standard writers on syphilis have pointed out the extreme difficulty of giving even relief from pain in cases of phagædenic chancre. Surgeons generally rely on opium, but the benefit obtained from large doses of the narcotic is by no means proportionate to the doses. Mr. Hutchinson and Mr. Walter Coulson recommend the uninterrupted use of the tepid bath, which appears to have been efficacious in many severe cases. Its use, however, is attended by obvious inconveniences, which might perhaps be avoided by the steam generator of the late Prof. Macartney. M. Laillier, of the Hospital St. Louis, in a lecture recently delivered, informs us that he has for many years employed iodoform for the relief and cure of painful ulcers, such as those of cancer, syphilis, lupus, etc., at the special hospital in the Rue de l'Ourcine, and at St. Louis. Iodoform is a compound of iodine, hydrogen, and carbon; it does not dissolve readily in water, but is soluble in boiling alcohol, and much more readily in ether. The local action of iodoform is powerfully anæsthetic, and it likewise promotes cicatrization of ulcers. It should be reduced to a very fine powder, and carefully applied to every point on the surface of the painful sore. Solution in sulphuric ether gives this fine powder, which in certain situations can be employed as an ointment. The influence of iodoform in promoting cicatrization is as well marked as its anæsthetic properties. It may be affirmed that iodoform rapidly changes the destructive tendency of constitutional ulcers into a reparative process. We have frequently seen phagædenic sores arrested by a few applications of the powder. This rapid action, according to M. Laillier, probably depends on the great proportion (90 per cent.) of iodine contained in the powder. One inconvenience must not be overlooked; the peculiar iodine odour is so powerful that some patients refuse to continue the treatment. Certain precautions are necessary during the application of iodoform. The sore should be carefully cleansed in the first instance. This is best done with tepid water spray. The sore should then be dried, the powder applied, and the surface covered with lint. For the first few days one, or at most two applications of the powder are employed; as cicatrization advances the intervals are longer. In cases where the ulcer has existed high up in the vagina, M. Laillier states that he has found it very convenient to employ Dr. Richardson's apparatus and irrigate the surface with the spray from a solution of iodoform in ether.—*Med. Examiner*, Nov. 1, 1877.

Contraction (Fissure) of the Anus in Children.

Kjellberg (*Nordiskt Med. Arkiv*, Band viii., Heft 4) prefers the term contraction to that of fissure, because he considers the spasm the more essential symptom. The affection is much more common in children than is generally supposed. Thus, out of 9098 children brought to the Polyklinik of Stockholm, it occurred in 128. Of this number 60 were boys, 68 were girls, and the majority (103) were a year old and under, no fewer than 73 being under four months of age. The contraction may be seated in the external sphincter, but the internal sphincter is much the more common site. The symptoms resemble those observed in the adult, but are less severe. In enumerating the causes, the author remarks that the fissure is by no means necessarily primary. It may be caused by the passage of hardened feces through the contracted orifice. Further, the contraction may exist without the fissure and *vice versâ*. For treatment, the author relies with confidence upon forcible dilatation with the fingers. At the same time, he does not neglect to remove any condition that may stand in a causal relation to the affection, such as constipation, worms, rectal catarrh, etc.—*Lond. Med. Record*, Oct. 15, 1877.

Case of Dorsal Spinal Bifida Cured with Elastic Ligature.

Colognese (*Annali Universali di Medicina e Chirurgia*, February, 1877) briefly reviews the change which has occurred in the treatment of spina bifida; how, formerly the best success attended the cases let alone, as all active meas-

ures were so fatal; how Morton's method of puncture and injection of iodine yielded an increased number of successful cases; then came the crushing forceps of Professor Rizzoli, successfully employed in spina bifida, and also in cases of cranial meningocele.

In his case, not having any better means at hand, he used a ligature of India-rubber tubing, which caused the separation of the dorsal projection in nine days, followed by perfect healing, and closing in of the spinal canal by eventual completion of the osseous arches.

The infant was nine days old when the ligature was applied, and became febrile for a day or two during the putrescent condition of the sphacelus produced, but rapidly regained a healthy state. The skin on the tumour was previously normal.—*Lond. Med. Record*, Oct. 15, 1877.

Effects of the Injection of Air into the Arteries.

M. COURTY read a paper before the Medical Section of the French Association for the Advancement of Science, held at Havre on the 25th of August, in which he communicates the results of experiments made in M. Vulpian's laboratory to study the general and local troubles produced by the presence of free gas within the vessels. Operating on dogs, both in the natural condition and under the influence of curare, he has, by opening a collateral branch, propelled air towards the carotid, crural, mesenteric, and splenic arteries, allowing the air immediately afterwards to circulate freely with and in the course of the blood. He has also measured the force requisite to propel this air through the peripheric extremity of one of these arteries, that had previously been tied, into the corresponding vein. In other experiments he caused the arterial tension to vary by acting on the vaso-motor nerves of the organ through which the bullæ of air were passing. M. Courty's experiments appear to have established the following points. Bullæ of air are capable of traversing the capillaries, though they impede the circulation. When from five to fifteen cubic centimetres of air are injected into an artery, afterwards left free, the whole will be found to have traversed the encephalon and passed from the carotid into the jugular in the course of from five to ten minutes. The same quantity of air passes through the lower limb of an animal in from five to twenty minutes. If a similar quantity of air be injected into the mesenteric or splenic arteries, however, it remains stationary, and is never propelled through either the spleen or intestines. It is obvious, therefore, that different organs differ considerably in the degree to which they are permeable to bullæ of air. When, instead of determining the rapidity with which the bullæ of air traversed different organs, M. Courty confined his attention to a single organ, the state of which was made to vary, he found that the circulation of the bullæ of air was facilitated when the arterial pressure was augmented; the bullæ traversed a limb more rapidly the sciatic nerve of which had been divided. The circulation of bubbles of air through the capillary network depends, therefore, first upon the organ itself; secondly, on the state of the vaso-motor nerves; and thirdly, upon the arterial tension. In studying the course of gases into the arterial system generally, M. Courty has established the fact that air injected by the peripheric extremity of an artery, if its volume be large and the pressure used considerable, may return, either wholly or in part, by arterial anastomoses, into the aorta, without traversing the corresponding capillaries. Small quantities thus injected into the aorta or into the vessel at large do not appear to produce any ill effects. In some cases the air produced sudden stoppage of the heart, in consequence of bullæ entering the coronary arteries, or more correctly, perhaps, owing to anæmia of the whole of the myelocephalon. When air is injected in large amount into the circulation, as in quantities of 200 to 300 cubic centimetres, death results from stoppage of the circulation, caused first by the passage into the veins and right heart of some of the arterial air and consecutive asystolia; secondly, by retardation of the circulation, caused directly by the presence of bullæ in the general capillaries; and thirdly, by paralysis of the myelencephalic vaso-motor nerves, and consequent fall of tension of the vascular system generally.—*Lancet*, Sept. 29, 1877.

Massage as a Surgical Remedy.

According to a recent issue of the *Deutsche Militärärztliche Zeitschrift*, treatment by massage is being largely adopted in military hospitals in Germany for acute and chronic cases of injury to joints and muscles, and for glandular enlargements. In twenty-four cases of acute traumatic articular inflammation, in which this method was employed by Staff-Surgeon GASSNER, the average time spent in hospital was eight and a half days, whereas in thirteen analogous cases treated in other ways the average time in hospital was twenty-nine days. Staff-Surgeon STARKE has also obtained good results from massage in the treatment of fractures and dislocations. He uses it to promote the absorption of extravasated blood, to check inordinate formation of callus after consolidation of the fracture, and to expedite the restoration of mobility. In the treatment of fractures Dr. Starke does not employ stiff plaster bandages but plaster-cataplasms, which, being easily removable, do not prevent the frequent use of massage. As soon as consolidation has taken place Dr. Starke has recourse to this method, prescribing at the same time active and passive movements, and the application of the douche.—*Med. Examiner*, Oct. 25, 1877.

Midwifery and Gynæcology.

Uterine Thermometry in the Diagnosis of Pregnancy.

In a paper published in the *Lyon Medical* Dr. MARDDUEL reviews the evidence which has been adduced as regards the relative temperature of the uterus, and its value in diagnosis. The first mention of the subject was in 1851, by Baerensprung, who found that the development of eggs was accompanied by an elevation of temperature. He also made observations on rabbits and on pregnant women, and arrived at the conclusion that the fœtus in utero has a higher temperature than the mother.

In 1866 Schroeder published observations showing that the temperature of the gravid uterus exceeded that of the vagina by 0°.19 C., and that of the axilla by 0°.29 C. For the former of these differences Winckle gave a value of from 0°.13 to 0°.19 C. In 1869, Wurster measured the comparative temperatures in the vagina of the mother and the rectum of the child in a breech presentation, and found the fœtal temperature to be higher by 0°.5 C. In a paper published in 1872, in the *Archiv für Gynäkologie*, Cohnstein contended for the value of uterine thermometry in diagnosis, first, in the early months, as evidence of the existence of pregnancy, and secondly, as evidence of the life of the child. If the death of the child be suspected, an equal temperature in uterus and vagina would prove it to be actually dead, but a single observation to the contrary would not be absolute proof, for the excess of heat in the fœtus would only be very gradually lost. During delivery the method would also be of value, and when the os was fully dilated, and the fœtus descended into the pelvis, it would be sufficient to take the temperature of the vagina, which would then participate in the heat of the fœtus.

The first positive observations on an extensive scale were published by Fehling in the *Archiv für Gynäkologie* for 1874. The number of cases was eighteen. In twelve cases, in which the uterine temperature was equal or inferior to that in the vagina, still-born children were delivered after some days. In four cases, the uterine temperature was from 0°.15 to 0°.30 C. higher than that in the vagina, and the children were living. In one case the temperature of the uterus was 39°.1, that of the vagina 38°.9, but yet the fœtus was dead and macerated. In this instance, however, the discrepancy was explained by the fact that the mother had been for some days in a febrile condition. In another case the mother had syphilis and hydrops amnii, and the fœtus was supposed to be dead, no move-

ment having been felt for fourteen days. Nevertheless, the temperature of the uterus was 38°.0, that of the vagina 37°.9, nine and a half hours before delivery. Eventually, a child affected by pemphigus was expelled, which made a few respirations, and gave some signs of life.

Schlesinger, in the *Wiener Medizinische Wochenschrift*, 1874, contested the accuracy of these deductions, and published observations in which he had found the uterine temperature higher than that of the vagina, even apart from the gravid condition. Almost all of his subjects, however, were suffering from uterine disorders.

In another paper in Virchow's *Archiv* for 1874, Cohnstein brought forward further evidence in support of his conclusions, including five instances in which, after the deaths of the fœtus, the uterine temperature had fallen to the level of, or below, that in the vagina. By experiments on rabbits with thermo-electric piles, he also found that, apart from pregnancy, there was no difference in temperature between the uterus and vagina. In his first paper Cohnstein had considered that the introduction of a curved thermometer into the gravid uterus, between the membranes and the uterine wall, was absolutely without drawback; but he now somewhat qualified this opinion, admitting that the introduction of the thermometer through the internal os may involve some risk of abortion. He considered, however, that this risk might be run when it was necessary to establish a precise diagnosis. He admitted also that in certain cases—namely, acute metritis, or endometritis, para- or perimetritis, ulceration of the internal surface of the lips of the os, the non-gravid uterus may have a temperature higher than that of the vagina. On the other hand, in fibroid tumours, chronic hypertrophy of uterus, or ovarian tumours, there is no such difference.—*Obstetrical Journal of Great Britian*, Oct. 1877.

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Artificial Abortion in the Vomiting of Pregnancy.

In Betz's *Memorabilien*, Band 22, Heft 2, Dr. Alois Valenta, after remarking that catheterization of the uterus is a most successful and ready method of bringing on premature labour, proceeds to relate a case of obstinate vomiting in a woman aged 36 years, the mother of ten children, all of whom had been born without any untoward events. All the remedies mentioned in the literature on the subject were tried in succession, and all failed. Dr. Valenta determined to bring on abortion by means of a catheter introduced into the uterus. Accordingly, on August 2, at 8.30 A. M., an English flexible catheter was introduced into the uterus and left there; at 5.30 P. M. next day a four months' male fœtus was expelled. There was some bleeding afterwards from the retention of the placenta, which had to be removed; the bleeding was controlled by a subcutaneous injection of ergotin. The patient made a perfect recovery. In the same journal Dr. Valenta also relates a case of induction of premature labour by means of uterine catheterization, with an equally successful result.—*London Med. Record*, Oct. 15, 1877.

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Case of Spontaneous Version after the Rupture of the Membranes in a Primipara.

The following case, reported by Dr. C. E. Underhill, at a late meeting of the Obstetrical Society of Edinburgh, is interesting as being a good example of an uncommon event—namely, the change in the position of a fœtus from a head presentation to a breech presentation after the membranes are ruptured, and when a considerable part of the waters have drained away.

Mrs. M., primipara, a healthy, well-made young woman, aged about twenty-five, had arrived at the middle of the ninth month of pregnancy. She was not very large. On the evening of the 31st May, 1875, when downstairs in a dark room she gave her abdomen a slight blow against the edge of an open door; this caused little pain or inconvenience at the time, but she was awakened about two o'clock in the morning by finding herself very wet and uncomfortable —"just swimming in water," as she said. This she supposed was urine drib-

bling away without her being able to control it. When I saw her an hour later, I found the os sufficiently open to admit one finger, the cervix about an inch and a half in length, and the uterus acutely anteflected, the membranes ruptured and water coming away; the head was presenting in the pelvis, and lying in the first position of Nægele; there was no difficulty in making out its position. The child was alive. She noticed that the water came away more freely when she was in the recumbent posture than when she was standing up. No pains had at this time been felt She was ordered to keep very quiet and lie down. The pains began slightly in the course of the day, but did not come on with any severity until the evening of the next day, 2d June. In the course of that afternoon the nurse noticed some meconium coming away, and on examination found a breech presenting. I was not sent for until 9 P.M., when I found the child had been born half an hour, dead, and coming with the breech first. The nurse told me that the head had been delayed at the perineum for a considerable time after the birth of the body. The child, a female, was of medium size (not weighed), and exceedingly pallid, but otherwise appeared healthy —the lips were black, and the labia minora uncovered. The mother made a very good and rapid recovery, and soon became pregnant again without any appearance of the menses. She was confined at the full time of a healthy child, in the middle of June last year.

There are two or three points worthy of short notice in this case. First, the uterus was acutely anteflected; that is, the fundus was of course directed forwards, and so also was the cervix, its cavity being very nearly in the same line as the vagina. Some authorities—Grailly Hewitt, for instance—look upon this condition as a cause of the vomiting of pregnancy, but Mrs. M. was entirely free from vomiting or even nausea, in both the first and second pregnancies. Secondly, the cervix was between an inch and an inch and a half in length, so that the taking up of the cervix into the cavity of the body, preparatory to the first stage of labour, had not yet occurred, and that within a fortnight of the full time. Thirdly, there was no menstruation between the first confinement and the second. This circumstance is not very common, but there are plenty of recorded instances—these, however, most frequently relate to women who have continued to nurse their children until the occurrence of the second pregnancy has caused the milk to fail. Mrs. M. had no opportunity of nursing, and the milk gave her little trouble.

The change in position of the child—that is, the spontaneous version, is, however, the most unusual feature in the case. That changes of this kind take place frequently in the last months of pregnancy is now well known, from the observation of Heyerdahl, Valenta, Schultze, Hœning, and others; and it has been shown that the more frequent the examinations made, the more changes are found. But these changes decrease rapidly in frequency the nearer we approach to the end of pregnancy, and are far less frequent in primiparæ than in multiparæ. Schultze found no case of complete version in a primipara within the last three weeks; Hœning, who observes that the very few versions that occurred in the primiparæ he examined within the last six weeks, were almost all in cases with contracted pelvis, met with no instance of complete version in a primipara at a later period than seven days before labour, and only two such within a fortnight. His investigations, it is true, did not extend over a very large series of women, but the number of examinations made was very considerable, averaging more than twenty in each case. Among his 53 primiparæ, 19 showed no change at all; while in 34 there were 15 complete versions and 38 partial versions—*i.e.*, from head or breech to shoulder, and *vice versâ*, besides 206 changes from one position of the head or breech to another of the same part. In one of his primiparæ complete version took place four times within the last four weeks of pregnancy. He points out also that head presentations are much more stable than breech presentations, especially among primiparæ, that is to say, that the change from breech to head is much more frequent than from head to breech. In the day before birth there was no change of position of any kind among his primiparæ, and only one among his thirty-four multiparæ.

My case appears to be worthy of record, in that the change, one from head to breech, took place in a primipara, in a well-formed pelvis, within forty hours

of the birth, and after evacuation, perhaps only partial, of the waters; it is to be borne in mind that the child was at least a fortnight premature.

I may add that a case in some respects similar to mine has been recorded very recently by Dr. Cordes, of Geneva.[1] His patient who was a multipara, aged forty, in her sixth pregnancy, had arrived at full time. When first examined, 16th April, 1876, the neck was found nearly taken up, high up and behind; the belly was pendulous, and the abdominal walls very thin; the breech was made out to present by external manipulation and auscultation; the pains did not come on, and labour was delayed until 24th April, when, at 9 o'clock A. M., the left ischiatic tuberosity was felt presenting, membranes unruptured; at 11.15 the neck was higher, and no presenting part could be felt; at 5.15 the head was felt in the right-occipito-anterior position. The child was born alive at 10 o'clock—the membranes had remained entire until after 8 o'clock, and were said to contain a large quantity of liquor amnii. Here the spontaneous version took place during labour, but the patient was a multipara, with pendulous belly and unruptured membranes, and the change that took place was the more common one, from the breech to the head presentation.

Murphy[2] records a somewhat similar observation, in which the breech replaced the head. It was observed by Dr. Johnson, of Stoke-upon-Trent. The patient, a primipara, was in labour when first examined, the os dilated to about the size of a crown-piece, head presenting, in right-occipito-posterior position; an hour later, when the membranes ruptured, a breech was found presenting. The child had a swelling on the upper part of the left parietal bone; this appears to have been a cephalhæmatoma.

Professor Simpson thought it was of importance to record the history of all such cases. The only difficulty in this case was to decide if labour had really begun, and the change in the presentation thus really fell under the category of spontaneous versions during parturition, or whether the change of position was due to spontaneous movement of the child, such as, commonly enough in multiparæ at least, took place up to the period of labour. It was interesting to observe that the change had taken place from head to breech, the reverse of what most frequently happened.—*Obstetrical Journ. of Great Britain*, Oct. 1877.

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On Malformation of the Uterus as a Cause of Abnormal Presentation and Vicious Insertion of the Placenta.

In the *Annales de Gynecologie*, September, 1877, Dr. Polaillon relates a case of placenta prævia with transverse presentation of the fœtus. The patient died, after turning, from hemorrhage. At the necroscopic examination of the uterus it was found to be heart-shaped, with two cornua, the fundus being depressed in the centre and thus forming a ridge on the inner surface of the uterus. The author then proceeds to argue that the ridge on the fundus uteri was the cause of the transverse presentation, inasmuch as it transferred the longest diameter of the uterus from the fundus and os to the space between the two cornua. This does not happen where the uterus is completely bipartite; in these cases, the ovoid shape of the containing cavity is preserved, and the child presents by the breech or vertex. Dr. Polaillon then proceeds to draw attention to the fact that, when a woman has once had placenta prævia, she is extremely liable to present the same complication in subsequent pregnancies. Although Dr. Polaillon is unable to explain the abnormal insertion of the placenta in malformed utéri, it is certain that the two conditions are commonly coincident. The altered shape of the uterine cavity satisfactorily accounts for the abnormal presentations accompanying it.—*London Med. Record*, Oct. 15, 1877.

[1] "Annales de Gynècologie," July, 1876, p. 41.
[2] "Dublin Med. Journal," May, 1863, p. 471.

On a Case of Osteomalacia of the Pelvic Bones.

In the *Medicinisch-Chirurgisches Central-Blatt*, May, 1877, there is reported a case of osteomalacia by Dr. STERNSCHUSS. The patient, 33 years old, had given birth to four living children, and, since the last live child, had had three miscarriages. During the eighth pregnancy, she complained of severe pelvic pains, especially over the sacral region. In her ninth pregnancy, these pains returned with increased severity. After repeated examinations, Dr. Sternschuss found that the ischial bones had closely approached each other as well as the rami of the pubes, which projected in the usual beak-like manner. Dr. Sternschuss was called to the patient in labour on June 17; the os was dilated to the size of a thaler; the pains were regular. The friends would allow no operative interference. The result was that, on the fourth day, the patient was still in labour, and Dr. Sternschuss was at last sent for to operate, as she was nearly dead.

He perforated the head, and, in the absence of a cephalotribe, brought the head through by a finger in the child's mouth. The mother recovered after a four weeks' attack of purulent endometritis. She can only stand with the aid of support. On examination some weeks later, Dr. Sternschuss found the vagina divided into two canals by the jamming together of the pubic bones.—*London Med. Record*, Oct. 15, 1877.

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Puerperal Fever.

Dr. FRITSCH has recently been writing on the local and preventive treatment of puerperal fever. Considering that this affection is due to the introduction of septic matters, and that these septic matters acquire this specific character only from their seat, and from the peculiar condition of the genital organs at the time, he recommends the systematic adoption of antiseptic measures, not only with a view to preventing infection by the hand of the accoucheur or the midwife, but even to carry off and neutralize the products of decomposition which may be developed in the uterus itself. The *Bulletin de Therapeutique* gives the following *résumé* of the prophylactic measures recommended by Dr. Fritsch:—At first, before making an examination, the hands should be well washed with soap, then rubbed with a nail-brush and a solution containing 38 grammes of carbolic acid dissolved in 3 grammes of glycerine and a litre of water. All the instruments used should be disinfected with carbolic oil. Before the examination the patient should be prepared if possible by a bath, in which the vulva and perineum should be washed with soap. The vagina should be washed out with the carbolized solution, which makes it neither rigid nor rugose. After confinement it should be particularly noticed that the lochial flow is free. In the ordinary position of the patient, the thighs being on a lower level than the other parts of the mattress, the lower part of the hollow of the sacrum becomes lower than the posterior commissure, so that liquid may collect and attain a certain heat without being able to escape. To avoid these inconveniences Dr. Fritsch injects a solution of carbolic acid of 2 to 100 (salicylic acid having been found too feeble to act as an antiseptic), at a temperature of 31° Cent., by means of an irrigator containing at least one litre of liquid until it returns colourless. For injection into the uterus Fritsch finds the best kind of catheter is a silver one, 30 centimetres long and 6 centimetres in circumference, with a curve rather greater than that of forceps. He uses the irrigations three times a day, at six A. M., one and eight P. M., whilst the vagina is washed out every three hours by the nurse. The last-mentioned washing should be used with every lying-in woman, but irrigation of the uterus is necessary only after an operation, especially in cases where the fœtus is dead and decomposed, where perchloride of iron has been injected to arrest hemorrhage, where there is a formation of clots and the necessary accompanying treatment, or lastly, in cases where there is fever for several days. The advantages of this mode of treatment are that the vulvar orifice soon ceases to be painful, that œdema disappears rapidly, that wounds cicatrize without granulation, that the quan-

tity of the lochial discharge rapidly diminishes, that the uterus contracts more quickly, and that the temperature falls even after the first injection.—*Medical Examiner*, Oct. 25, 1877.

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Erysipelatous Metritis.

At a late meeting of the Obstetrical Society of Dublin (*Obstetrical Journal of Great Britain*, Aug. 1877), Mr. THOMAS FINUCANE read an interesting paper on Erysipelatous Metritis, the importance of which has lately been rather forcibly brought to his mind by the occurrence of two deaths of young women after their confinements, as also a third death in the same neighbourhood—the virus in this case having been brought from a scarlatina patient. The nurse who attended on the first two cases (I may mention she was not a qualified one) had a daughter ill with erysipelas at the time of her attendance. She did not conceal this, but told the first family of it, "thinking," as she said, "that it was no harm." It has been the subject of much inquiry with myself why the case of erysipelas, as also of scarlatina, should recover, and the poison or virus conveyed or transmitted should prove fatal in every case of confinement with which it has been brought in contact, so far as I know. The patients were not in a position to have a medical attendant, unless in an emergency; and in such I was sent for to see one of those cases, the symptoms and history of which I now submit. I first visited this patient on the evening of the 3d of November, 1876. She was then in the first stage of labour, progressing favourably—so that she was confined on the morning of the 4th. The following day (the 5th) she had severe abdominal pains, which were treated by the nurse—the usual terebinthinate treatment followed by a full opiate, which gave relief. On the 6th, however, I was again sent for, and found the patient in a critical state—very rapid pulse; restlessness; suppression of the lochia; breasts almost empty; much tympany; no vomiting. Repeated the terebinthinate enema, linseed poultices, full opiates, with minute doses of submuriate, chicken-broth. On the morning of the 7th a diffused rash showed itself over the thighs and hips of the patient. She grew rapidly worse; felt as if she must burst; could not lie in any position for any length of time; the tension of the abdominal walls was quite remarkable and unyielding. The pulse on the evening of the 7th was peculiar—at times it seemed almost to disappear, and then to become more distinct. She died on this, the fourth night after her confinement, the functions of kidney and bowels being quite as they ought to be during her illness. In a few days after her death, her sister, who was in constant attendance upon her, was covered with a rash, and has been suffering almost ever since with articular and muscular pains—said by her medical attendant to be a regular rheumatic attack.

[The author quoted at length the opinions of Drs. Austin Flint, Bennett, and Bryant, on epidemic erysipelatous fever and erysipelas, and of Dr. Carpenter on the operation of medicinal or poisonous substances, and their determination to special parts and organs of the body. He observed that many facts connected with the action of poisons on the economy tended to confirm the Hallerian doctrine of irritability. Whether it be the inhalation of a poisonous gas, or the contact of an irritant, the inherent irritability of muscle is roused to rebellious action. In accordance with this theory, the suppression of the lochia would depend on muscular action. In conclusion, he remarked that the position of his patient in a dark confined room was much against healthy respiratory interchange, so essential for our well-being at all times; and therefore he suggested the propriety of the admission of more light into our dwellings and hospitals, having regard to its purifying influences, and to its wonderful action upon some poisonous substances.]

Dr. ATTHILL thought that the name "erysipelatous metritis" was not borne out by the pathology of the case, which he regarded as one of autogenetic septicæmia. He believed that scarlatina was not so dangerous to puerperal women as is generally supposed. He had never known a case in which a puerperal patient took the infection of scarlatina, though he did not deny that it occurred occasionally. A good many deaths from metria had occurred in

the Rotunda Hospital, chiefly in March last, and they had at the same time several cases of scarlatina, of which one at least was kept in the wards, but no patient in the hospital contracted the disease.

Dr. DOYLE mentioned the case of a puerperal woman who had a child affected by scarlatina in the same bed with her the day after delivery, but escaped the infection.

Dr. MORE MADDEN thought it very dangerous for medical men to attend labours while they had cases of scarlatina under their care; he mentioned the case of a lady who would keep her child, ill with scarlatina, in the same room with her. On the third day she was attacked by symptoms of puerperal fever, of which she died.

Dr. MCCLINTOCK said that parturient women might be protected by having had scarlatina previously; but that if scarlatina did arise before the third day of childbed, it was more dangerous than puerperal fever itself. He considered, however, that the idea of the communicability of contagious diseases, or their being carried about by medical men, was at present enormously exaggerated.

The PRESIDENT thought it a mistaken doctrine that certain diseases were communicated by poison, and could not arise without it.

Dr. DENHAM thought that the same poison would produce erysipelatous inflammation in one patient, scarlatina in another, and puerperal fever in a third. He considered puerperal scarlatina most dangerous. Out of fifteen cases of it during his mastership, twelve died.

Dr. HENRY KENNEDY said that in patients who died from puerperal fever he had often found an erysipelatous state about the vulva, nates, and groins, but he did not believe the disease could have spread from erysipelas. There was no evidence that scarlatina could engender puerperal fever, but there might be a complication of the two.

Dr. FINUCANE, in reply, said that his object was to show that the cause of the fatality of erysipelas or scarlatina in puerperal patients was that the poison affected the tissues, and not the blood.

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Secretion of Milk in the New-born.

FAYE (*Nordiskt Medicinskt Arkiv*, Band viii., Heft 4) is of opinion that the fact that there is a normal secretion of milk in the new-born is not sufficiently known. He ascertained, from an examination of 120 cases, that it was absent in six only, four being boys and two girls. The distribution of sexes in the others was nearly equal. In 45 per cent. of the whole number it commenced on the fourth or fifth day; in the others, from the second to the tenth day—never later, never earlier. As a rule, the secretion commences with the fall of the umbilical cord, but the author denies the existence of any causal connection between the two, as the exceptions to this coincidence are sufficiently numerous. The quantity of milk emitted is, in general, very small, usually two or three drops. Genser, however, on one occasion expressed three grammes. When mastitis is produced, the secretion often disappears. Milk was never found after the first five or six weeks. It is, as a rule, very alkaline, and resembles colostrum. Under the microscope, it exhibits numerous granules and some fat-globules. The latter are ordinarily sparse, but occasionally are as numerous as in woman's milk. The analysis given by Genser is: Casein, 0.56; albumen, 0.49; sugar, 0.96, fat, 1.46; salts, 0.83; water, 95.7.

The author mentions, further, that the mammary gland of the male occasionally swells slightly at puberty, and may then contain one or more drops of a secretion resembling milk.—*London Med. Record*, Oct. 15, 1877.

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On the Anatomy and Diagnosis of Ovarian Tumours, developed partly within and partly without the Peritoneum.

In the *Centralblatt für Gynækologie*, July 7, 1877. Dr. KARL STAHL, of Freiburg, relates the following case: On the 25th of May, 1877, Prof. Hegar operated for an ovarian tumour, which, on account of its being developed partly within and partly without the peritoneum, is of importance in regard to the

anatomy and diagnosis of such tumours. Before the operation the following points were conspicuous: abdomen unequally distended, most prominent below on the right side; somewhat below the navel a furrow passed across from right to left, over the tumour; at the lower border of the groove a sharply defined transverse band was perceptible to the eye and the touch, whenever the patient strained, coughed, or in any other way brought her abdominal muscles into action; the portion of the tumour situated below this groove was more tense and firm, and less distinctly fluctuating, whilst the upper portion fluctuated in great, clear waves; on combined examination by the vagina and the rectum, the whole uterus could easily be grasped; from the right angle of the fundus a tense, cord-like membrane extended a finger's length to the tumour.

The diagnosis was, a multilocular cystoma of the right ovary, with a long, broad pedicle. The operation fully confirmed this diagnosis, but revealed unexpected facts in regard to the mode of development of the tumour, which, moreover, explained the peculiar external features. Although numerous cyst-compartments were present, yet the tumour was really made up of two parts—a lower one, of extra-peritoneal, and an upper one of intra-peritoneal development. The former had so raised the anterior fold of the broad ligament that the normal pouch between the broad ligament and the anterior wall of the abdomen was effaced. The tumor had forced itself forward and upward, between the peritoneum and the fascia transversalis, almost to the level of the umbilicus; had extended laterally to the lateral wall of the pelvis, and reached downward nearly to the upper edge of the foramen ischiadicum. The posterior fold of the broad ligament was unaltered. The tumour had not unfolded the median portion of the broad ligament, but between it and the uterus was found a well-defined pedicle, of the character above described. The upper portion of the tumour was wholly intra-peritoneal. It was separated from the lower portion by a pronounced furrow, which was still more sharply defined by a tendinous, thickened, transverse band about a centimetre in breadth. In accordance with these relations, the abdominal cavity, when opened, was found divided into an upper and a lower space, by a sort of diaphragm (the elevated anterior fold of the broad ligament).

A transverse furrow may, indeed, be occasioned by an ordinary cystic tumour, but scarcely one so sharply marked as in this case. More important was the sharp and tense transverse band at the lower part of the groove, on forced straining, *i. e.*, increase of the intra-abdominal pressure. It was due to an impulse exerted upon the intra-peritoneal portion of the tumour, whilst the increased pressure did not alter either the position or the shape of the extra-peritoneal portion shut in between the pelvis and the peritoneum. The greater firmness of the lower portion of the tumour cannot be ascribed to its containing a greater number of small cysts, or to their contents being thicker—for below, as well as above, there was a large principal cyst, with thin contents—but to the great distension of the lower cyst-wall by the dense, thickened peritoneum overlying it. Although the greatest carefulness is necessary to make this difference in consistence of value in diagnosis, yet, in conjunction with the transverse furrow, and the sharply-defined band on straining, it may direct attention to the possibility, and even the probability, of such a development, and under certain circumstances, which were wanting in this case, may make the diagnosis sure, by reason of the dense connection of the tumour with the lateral border of the uterus or the lateral wall of the pelvis. Further observations are necessary to show whether the transverse band is a constant feature.—*Hospital Gazette*, Oct. 1, 1877.

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On Hemorrhage from the Retroflected Uterus, and its Treatment.

Dr. J. Braxton Hicks, Obstetric Physician and Lecturer at Guy's Hospital, in a paper on this subject read before the British Medical Association at its late meeting (*British Med. Journ.*, Oct. 6, 1877) said: When discussions on the treatment of the retroflected uterus have taken place, it has generally happened that two opposite opinions have declared themselves: one strongly in favour of mechanical treatment; the other, if not actually repudiating it, yet

considering it the *dernier ressort*, not to be tried till constitutional management and local treatment have failed. Between these two extremes there are various shades of opinions, inclining to the one or to the other according as experience, education, and other circumstances have affected the possessor. I shall perhaps be not far wrong when I rank the majority of the profession as forming the intermediate class.

The difference of the extreme opinions appear to me to be owing to these facts.

1. Women are not unfrequently found with completely retroflected uterus, without the least uneasiness or complaint, all their lives.

2. Women complaining of certain symptoms, and even crippled by them, are found to have retroflected uterus; all of these symptoms subsiding upon the restoration of the uterus to its normal position.

3. It is often observed that, before the retroflection is confirmed, the uterus sometimes is retroflected, and at another time in normal position.

4. That temporary engorgement of a retroflected uterus, which had before given no trouble, frequently subsides under horizontal posture and appropriate treatment.

According as these conditions have presented themselves, in respect of number and intensity, to the various observers, so have their opinions inclined in one direction or another.

It is not my intention, nor is it suitable at the present time, to occupy this meeting with a full discussion on retroversion and retroflexion; but there is one clinical state of it, by no means unfrequent, upon the treatment of which as much difference of opinion has existed, and in a measure still exists, as on any part of the subject. Upon this subject I am desirous of adding the result of my experience. Hemorrhages may occur from the retroflected uterus in various degrees; the remarks I shall make apply to all of them, more or less, but it may be well to take a typical example.

The uterus is completely retroflected, the body two or three times the normal size; sensitive to the touch, especially at the fundus; the os and cervix are large and patent; there are much leucorrhœa and menorrhagia, with greater or less bleedings between; coagula passing often, sometimes with pain; pain in the back, bearing down, uneasiness in the groin; and indeed all the direct and reflex symptoms produced by retroflexion exaggerated.

It has been contended that in this state it is unadvisable to handle the uterus, so as to cause its restoration to its normal position, and to retain it by vaginal pessaries. It has been argued that this state is inflammatory, and that the disturbance will increase it; that the proper thing is to subdue the inflammation, first, by depletives locally and by postural treatment, and then to replace the organ, should it not have recovered its position by the rest.

This line would be doubtless correct, were the premises upon which it rests correct also. Let us consider for a few moments these data. The effects of retroflexion of the uterus have been well recognized, and may be divided into those which are derived, first, from the obstruction produced by the flexion; and secondly, from the dependent position of the fundus. By both of these the secretions are retained beyond their usual time, a certain amount of irritation is set up, which increases the secretion, and this accumulating, distends the cavity; and thus, in the case of hemorrhage, a larger amount is permitted to flow. Besides this, a clot, often forming, has to be expelled by uterine contractions, which cause pain, bearing down, and backache; these clots, by breaking up, by a species of decomposition, set up increased irritation and flow of blood and serum, etc. Besides this, the level of the fundus being three to four inches lower than normal, there is a greater pressure on its vessels by gravitation, thus facilitating increased bleeding; and at the same time, a certain amount of dilatation of the vessels themselves, with frequently exudation into the tissues they supply. And thus we find thickened walls, increased in thickness, also by the action necessary to expel contents abnormally retained. This fluid pressure cannot exist without the nervous structure being pressed upon, and thus tenderness and uneasiness are felt, which no doubt are increased by the causes of irritation to the mucous surface already alluded to. When

miscarriage has occurred in a retroflected uterus, then these effects are very much increased; and continue for a long time, so long that, as Dr. Barnes has remarked, the original causation is forgotten. But this position also renders the expulsion of the ovum more imperfect and prolonged, especially where there is, as is frequently the case, a firm adhesion between the villi and the uterine wall; and this is well shown by my own experience, for in nearly every case where I have been called in consultation for difficult abortion, with violent hemorrhages, the uterus has been found retroflected. Other effects succeed to retroflexion, such as external infiltration of serum, or even blood, besides the reflex neurotic symptoms; but at present I am alluding to the actual clinical state of the uterus itself, the result of its retroflexion especially accompanied by hemorrhages. And the question which arises from the consideration of these facts is: Whether the large and tender state of the uterus is dependent upon the retroflexion, or a coincidence with and accident to the state? If the organ have become so in consequence of its malposition, then the line of treatment seems clear, namely, to restore it. But, say some: If you interfere with the uterus in this condition, you will cause an increase of the inflammation and make matters worse.

But, suppose it can be shown clinically that the uterus *can* bear the handling necessary for its restoration to position, that it is not made worse, but, on the contrary, gradually loses all its bulk and tenderness, then the objection just mentioned is without ground. But in truth the term "inflammation," as applied to the sensitive irritable state, is a misnomer: not but that much care should not be exercised in the restoration, lest we unnecessarily increase its irritability by our manipulation. To assist in the solution of this problem, I have ventured to add briefly the results of my own clinical experience, and this is as follows:

1. In no instance where I have restored the uterus, and kept it *in situ* by a vaginal pessary, have I found any inflammatory symptoms follow.

2. In no case have I found other than improvement, the uterus gradually becoming smaller, less sensitive, and the discharges from it less, till it gradually resumed its normal state, so far as was compatible with a certain amount of permanent thickening, the result of the former engorgement.

3. In the case of hemorrhage, and this especially the sequel of abortions, the restoration of the uterus to its normal position has always been attended by a diminution of the loss rapidly, and in a few months the cessation, except when other causes for hemorrhage, as fibroids, abrasions, etc., coexisted. An exception also must be mentioned, namely, that the first period after restoration is more free not infrequently, although the second shows clear signs of abatement. This is probably owing to the ease with which the fluid can escape from the uterus now in normal position, while the causes of the hemorrhage in the uterus are not yet much lessened.

I may add that, in restoring the uterus enlarged and tender, I do not employ the sound, at least very rarely. By gently lifting up the fundus out of Douglas's pouch (in which it is somewhat firmly retained by the recto-uterine ligaments, as shown by Dr. John Williams) by the finger introduced by vagina or rectum, and hooking down the os, assisted by the supine posture, and then introducing a Hodge's pessary, I have generally succeeded in bringing the fundus into its natural position.

If abrasions be present at the first, I generally reduce the uterus and wait a little time; if the abrasions be not cured, I apply the usual remedies. However, we may, in the less irritable organs, apply them earlier, the pessary remaining *in situ* or removed each time. Frequently, however, the abrasions and catarrh pass off as the general improvement takes place.

If the facts which I have noted agree with the experience of others, which I think to a large extent they do, then it may be laid down, as a rule of practice, that notwithstanding the tender and bulky state of the uterus we may, when we find it retroflected, especially associated with metrorrhagia, without fear restore it at once to position, and employ a Hodge's pessary to retain it there. If the restoration be difficult to complete at once, the uterus still inclining somewhat backwards, it will, so far as I have noted, fall into its place shortly by the action

of the pessary, assisted by the various movements of the body. If the patient complain of uneasiness, it is very easy to neutralize all pressure by the adoption of the horizontal posture, assisted by the prone position. If this be carried out for a few days, I have found that the uterus tolerates the instrument well, for in a short time the sensitiveness is lessened by the restored position as before mentioned. Of course, sometimes the uterus is adherent in its retroflected state; care must, therefore, be taken lest we carry on our attempts at restoration too vigourously. Gentle tentative trials should, of course be made at commencement.

I need hardly point out that care must also be taken in our diagnosis, lest we mistake retro-uterine hæmatocele for the bulky tender retroflected fundus. I may give one case, as illustrative of the advantage of at once restoring the uterus to its normal place in severe hemorrhage.

A. B., married, mother of six children, was admitted under me into Guy's Hospital, April 4th of this year, in consequence of very severe uterine hemorrhage, which led her medical man to suspect malignant disease. She was very exhausted and blanched. The history of the case was as follows. She menstruated regularly up till last November. After this she saw nothing for nine weeks, when severe hemorrhage set in, but it was shortly checked. She kept her bed for three weeks, but upon getting up the bleeding at once returned, and continued daily up to the time of admission, being very profuse whenever she exerted herself, altogether having had nine or ten severe hemorrhages. I found the cervix patulous, more anterior than normal, with a swelling behind. This proved to be the body of the uterus, retroflected, somewhat more bulky than normal. I essayed to restore the uterus to its proper position; but the bleeding which took place, on the use of the sound, was so profuse that I had to desist, and plug the os with a sponge-tent. After ten minutes this was removed and the bleeding was found to be arrested. I then introduced a Hodge's pessary, which, assisted by digital pressure on the fundus *per vaginam*, restored the organ. A dose of ergot was then given. The bleeding at once ceased, with the exception of a slight flow for three days, followed by a little watery discharge. She gradually regained strength and colour, and finally menstruated normally on May 13th, about five weeks after her admission. To the present time, she has continued regular. She had only one drawback from rapid recovery, a slight local inflammation of two of the veins in her legs.

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Removal of a large Fibroid Uterus with Outgrowths, and of both Ovaries.

Mr. J. Knowlsey Thornton, at a late meeting of the Medical Society of London (*Lancet*, Oct. 27, 1877), read the notes of a fatal case. Stating that a patient whose case was similar, and had been reported by him in the last session of the Society, was now in good health, he proposed to continue to bring forward every case, whether successful or not, upon which he operated by abdominal section for the removal of uterine tumours. He considered pain, hemorrhage, and size to be the three factors justifying operation where the social status of the patient was such as to enable her to obtain proper treatment, rest, and nursing. The present case was that of a widow, thirty-eight years of age, who had been forced to give up her occupation of cook, upon which she depended, on account of continued enlargement of the uterine tumour, pain, and hemorrhage. The operation was performed at the Samaritan Hospital on July 17th, 1877, occupying two hours, the chief difficulties encountered being the dislodgment of the tumour from the pelvis, transfixing and ligaturing the pedicles. Finally the whole cut surface of the broad ligament was laced with a connected chain of strong silk ligatures, a method successfully followed in his previous case, as well as in others of Mr. Spencer Wells. He had used it himself for one or both pedicles in thirty-two ovariotomies, and the result in only one out of the five fatal cases could be attributed to the ligature. The tumour, after removal, weighed 3 lbs. 13 ozs., together with the ovaries. Death took place from rapid septicæmia thirty-five hours after operation. There was no general peritonitis, but some putrid suppuration had occurred around the pedicle. In commenting on the case, Mr Thornton said that in future cases

he should employ a Keith's glass drainage-tube for, at any rate, twenty-four hours after operation; and although not wholly discarding the silk ligature, he thought that silver wire, or some form of catgut, would be found preferable.

Medical Jurisprudence and Toxicology.

A Rare Case of Chronic Lead-Poisoning.

Under the above heading a recent number of the *Wiener Medizinische Presse* contains an account of a family, three members of which suffered from symptoms of chronic lead-poisoning, the source whence the poison was derived eluding discovery for a considerable period. In the early part of the year a merchant, æt. 60, previously in good health, began to complain of fulness and discomfort in the stomach, the appetite continuing fair, but the bowels being somewhat constipated. For some time previously he had lost colour; but this change was thought to be owing to domestic troubles. In April the pains in the stomach became very severe, and were accompanied by nausea and vomiting, and symptoms of strangury. His complexion had a marked earthy tinge. Careful examination of the thorax and abdomen yielded only negative results. Morphia was injected subcutaneously, and castor oil administered by enema and by the mouth. The constipation at last yielded, and some relief followed, though the evacuations were scanty. A faint blue line was at this time visible on the gums. The acute symptoms passed off in a few days; but shortly afterwards the patient complained of severe attacks of intermittent headache, confined to one side. Quinine was given in full doses, with the best effect. The physician in attendance, Dr. LEDETSCH, came to the conclusion that the symptoms were due to lead-poisoning, and his conviction was strengthened by the fact that the patient's wife had been suffering for some time from dyspepsia and constipation, while her complexion had become of a dirty-whitish colour. Both patients, therefore, presented the same symptoms in varying degrees—viz., a marked earthy-looking complexion, pains in the abdomen, constipation, with absence of fever. An examination was made in vain for the source of the poison; the wine in common use and the water were both analyzed. The husband's urine was examined, but no lead found. A little albumen, however, was present. On the 12th of May, he was again taken ill with the same symptoms, which yielded to treatment. A few days afterwards, the father being still ill, a son who had come on a visit, and had been at home five weeks, was attacked with the same symptoms, which in his case, however, were extremely violent, the retraction of the abdominal muscles being an early and marked feature. The patient was treated by morphia injections, clysters and castor oil with croton oil internally; and the symptoms subsided in twelve days. A quantity of his feces were sent by Dr. Ledetsch to Professor Ludwig, of Vienna, for analysis, and a considerable amount of lead was discovered. There was now no doubt as to the cause of the symptoms, and diligent search was again made for the lead. At last some preserve of cranberries was examined, and this on being carbonized was found to be coated by a yellow layer. The cranberries were sent to Professor Ludwig, and he reported that they contained a considerable quantity of lead. It was found that the cranberry preserve had been boiled in a large clay pipkin, badly glazed inside with a preparation of lead. This had been dissolved by the acid of the cranberries. The discovery of the lead in the feces was an interesting point in the case. Neubauer and Vogel state that the salts of the heavy metals, such as lead, antimony, arsenic, gold, etc., are found in the urine only when given in large doses; but they may be found in the liver and feces when administered in very small and repeated doses. The patients had all been in the habit of eating the cranberry preserve with their meat, perhaps daily, for some time.—*Med. Examiner*, Sept. 20, 1877.

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Medical Jurisprudence and Toxicology.

A Rare Case of Chronic Lead-Poisoning . 575

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